NATIONAL INSTITUTE OF SIDDHA

Tambaram Sanatorium, Chennai – 47

AFFILIATED TO THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY,

CHENNAI - 600 032

PART – I

A STUDY ON KORAI KIZHANGU CHOORNAM

(Cyperus rotundus - Linn)

For Kuthi Kaal Vatham

PART – II

A STUDY ON PALAGARAI PARPAM

For Vellai Noi

(DISSERTATION SUBJECT)

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH II – GUNAPADAM DEPARTMENT

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CERTIFICATE

This is to certify that I have gone through the dissertation submitted by **Dr.P.Kavitha**, student of final **M.D Siddha**, branch II, **Gunapadam department**, National Institute of Siddha, Chennai - 47 and the dissertation work **"A study on Korai kizhangu Choornam "** and **" A study on Palagarai Parpam"** has been carried out by the individual only. The dissertation does not represent or reproduced the dissertation submitted and approved earlier.

Place: Chennai - 47

Date:

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INTRODUCTION TO SIDDHA SYSTEM

Siddha system is one of the oldest system of medicine in India. The term ‘Siddha’ means achievement and the ‘Siddhars’ were saintly figures. Eighteen ‘Siddhars’ seen to have contributed towards the development of this ancient medical system.

Siddha system of medicine is based on ‘Saiva Siddhantham’ ‘ Siddha’ is a Tamil word that is derived from its root ‘Chit’ which means perfection in life or ‘heavenly bliss’. The word ‘Siddha’ denotes one who has achieved some extraordinary powers (Siddhi). This achievement was related to the discipline of mind and its superiority over body. It was accomplished through both Yoga and Medicine. Thus Siddhars (Practitioners of Siddha) became the symbols of Psychosomatic perfection and so the Siddha medicine became a combination of medicine and yoga.

Mythically the origins of Siddha is attributed to God Siva, who is supposed to have handed it down to his consort Parvathi (Shakthi) who in turn passed on the sacred knowledge to Nandhi, from where it was transmitted to the Siddhars.

The Siddha medical works were bestowed by the great Siddhars after attaining spiritual knowledge through physical perfection and spiritual salvation as explained by the Saint in the following verse.

ஆதி யுமையாட்கு அருள் மருத்து வாங்கத்தை
ஆதி யுமையருளால் அம்புலியுள்- கோறுநற்
செந்தமிழால் கூறுதற்குச் செம்பவள வேழமுகன்
கந்தமலர்ச் செஞ்சரனே காப்பு

The science of Siddha medicine , unlike other systems is a complex system of science in as much as it had included in the works of Medicine, Alchemy, Philosopy, Yoga, Varma etc, with a view to elevate them in the long run, the level of spiritualism .

Herbal medicines have become popular form of therapy. A drug from an herbal source would have ready acceptability by the masses as it suits the psychology of the people at large. They are often perceived as being nature and therefore harmless and cheap. The herbs also contain lot of essential minerals needed for human health.

The incidence of Kuthi kaal vatham is increasing now-a-days because of negligence, It creates a lot of stress and strain to the patient. Hence it needs good medication for recovery.

The drug Korai Kizhangu is indicated for Kuthi kaal vatham in Gunapaadam Mooligai Vaguppu, So the author has selected this drug to evaluate Analgesic, Anti-Inflammatory and calcium depletion activity

AIM AND OBJECTIVES

AIM:

To evaluate the efficacy of Korai Kizhangu Choornam in the management of Kuthi kaal vaatham (Calcaneal Spur).

OBJECTIVES:

The clinical efficacy of Korai Kizhangu Choornam has been evaluated in the following aspects.

- Collection of evidences in Siddha aspects
- Collection of evidences in Chemical aspects
- Bio-Chemical analysis
- Physical properties
- Toxicological study
- Pharmocological analysis
- Open clinical trial of Korai Kizhangu Choornam for Kuthi Kaal Vaatham given orally

GUNAPADAM ASPECT

கோரைக் கிழங்கு

வேறுபெயர்

முத்தக்காசு

சுவை - துவர்ப்பு

பிரிவு - கார்ப்பு

செய்கை:

துவர்ப்பி
வெப்பமுண்டாக்கி
உரமாக்கி
சிறுநீர்ப்பெருக்கி
வியர்வைப்பெருக்கி
உள்ளழற்றி
ருதுவுண்டாக்கி
புழுவகற்றி

குணம்:

இதனால், நளிர்ச்சுரம், குருதியழல் நோய், சுரவகைகள், நீர்வேட்கை, முப்பிணி கழிச்சல், பயித்தியதோடம், பித்ததாகம், கபரோகம், **குதிக்காலைப் பற்றிய வாயு,** வாந்தி ஆகிய இவைகள் போம்.

சீத சுரந்தீர்க்குஞ் செம்புனல்பித் தம்போகும்
வாத சுரந்தணிக்கும் வையகத்தில் - வேதை செய்ய
வந்த பிணியையெல்லாம் வாட்டுமுத் தக்காசு
கொந்துலவும் வார்குழலே கூறு

அதிசாரம் பித்தம் அனற்றாகம் ஐயங்
குதிவாதஞ் சோபங் கொடிய ___ முதிர்வாந்தி
யாரைத் தொடர்ந்தாலும் அவ்வவர்க்கெ லாங்குளத்துக்
கோரைக் கிழங்கைக் கொடு

மருத்துவப் பயன்கள்

கோல வுணவைக் குமல னடலிலடு
கோல வுணவைக் கொடுக யத்தை

பொருள்:

கோரைக்கிழங்கின் மாவைக் கிரமப்படி உபயோகிப்பின் காசநோய் குணமாகும்.

கோரை கிழங்குக் குடிநீர்:

முத்தக் காசு பற்படகம் முதிர்ந்த விலாமிச் சிருவேலி
சுத்த சுக்கு சந்தமுஞ் சுகமாய்க் காய்ச்சிக் குடிப்பீரேல்
சித்தப் பிரமை யுடன்பிறந்த தேனே மானே சேற்கண்ணாய்
பித்தத் துடனே வந்தசுரம் பேசா தோடிப் போய்விடுமே.

பொருள்:

கோரைக் கிழங்கு, பற்படாகம், விலாமிச்சு, வெட்டிவேர், சுக்கு, சந்தனம் இவற்றைச் சமமாய்க் கலந்து காய்ச்சிக் குடிக்கில், பித்தசுரம் பேசாது ஓடிப்போகும்.

முடித்துக் கனத்த கருங்குழலாய் முத்தக் காசு மாம்பட்டை
இடித்தும் பொடித்தும் பிட்டாக்கி யிறுகப் பிழிந்திட் டதிவிடயம்
தடித்த இலவம் பிசினோடு தகமை பெறவே கொள்வாயேல்
துடித்து விழுந்த வதிசார சுரத்தைப் போக்குஞ் சொன்னோமே.

பொருள்:

கோரைக்கிழங்கு மாம்பட்டை ஆகிய இரண்டையும், இடித்துப் பொடியாக்கிப் பிட்டு செய்து, அதை நன்றாய்ப் பிழிந்தெடுத்த சாற்றில், அதிவிடயம் இலவம்பிசின் இவற்றைச் சேர்த்து, தக்க அளவில் உட்கொள்ள, கழிச்சல், சுரம் தீரும்.

கோரைக் கிழங்கின் குடிநீரைக் கழிச்சல், குன்மம், வாந்தி முதலியவைகளுக்குக் கொடுக்கலாம்.

இஞ்சி, கோரைக்கிழங்கு இவ்விரண்டையும் இடித்துத் தேன் விட்டரைத்து ஒரு சிறு சுண்டை அளவு கொடுக்க, சீதக்கழிச்சல்போம்.

பச்சைகிழங்கை அரைத்து மார்பில் பற்றிடப் பால் சுரக்கும், தேள்கடி வாயிலும் பற்றிடலாம். உடலில் பூசிவர வியர்வை நாற்றம் விலகும்.

கோரைக் கிழங்கு, பேய்ப்புடல், திரிபலை, திராட்சை, வேம்பு, வெட்பாலை இவைகளை வகைக்கு 8 கிராம் எடுத்து முறைப்படி குடிநீரிட்டுக் கொடுக்க, சுரம் நீங்கும்.

அபினி, கஞ்சா முதலிய நஞ்சுக்கு, கோரைக்கிழங்கு, இலைக்கள்ளிவேர், வசம்பு, சுக்கு இவைகளை வகைக்கு 8 கிராம் எடுத்து, முறைப்படி குடிநீரிட்டுக் கொடுக்கப் போம்.

குழந்தைகளின் ஐயசுரத்திற்குக் கோரை சேர்ந்த மருந்து பயன்படும்.

கோரைக்கிழங்கு முழுகுநீர்:

கோரைக்கிழங்கு, திரிபலை, மருக்காரை, புங்கு, கொன்றை, வாலுழுவை, வாற்கோதுமை, ஏழிலைப்பாலை, கோஷ்டம், ஞாழல், மரமஞ்சள், வெண்கடுகு இவற்றை நீரிலிட்டுக் காய்ச்சி நீராடி வர, பெருநோய், சொறி வீக்கம், பாண்டு நீங்கும்.

கோரைக்கிழங்கு, சீந்தில், மரமஞ்சள், அன்னபேதி, கோஷ்டம், வெள்ளி லோத்திரம், கந்தகம், சாம்பிராணி, வாய்விடங்கம், மனோசிலை, தாளகம், அலிசிப்பட்டடை இவற்றைப் பொடித்து, தேகத்தில் எண்ணெய் தடவி, அதன்பின் மேற்படி பொடியைத் தேய்க்க, சருமப்படை சிரங்கு நீங்கும்.

கோரைக்கிழங்கு மிக்க வாசனையுள்ளது. இது இருதயத்திற்கும், வயிற்றிற்கும் வலுவை கொடுக்கும்.

வறட்சியை உண்டாக்கும்.

வியர்வையை பிறப்பிக்கும்

நீரைப்போக்கும்

கூந்தல் வளர இது உபயோகமாகின்றது

கோரைக்கிழங்கு சேரும் வாத நோய்க்கான மருந்துகள்

1. **தொந்த சுரக் குடிநீர்**[9]

சேரும் சரக்குகள்

சிறுதேக்கு	தேவதாரம்
பற்படாகம்	கோஷ்டம்,
கோரைக்கிழங்கு	பேய்புடல்
சீந்தில்கொடி	சுக்கு
நன்னாரி	
சிறுகாஞ்சொறி.	

இவற்றை குடிநீரிலிட்டு கொடுக்க **வாதம்,** பித்தம், அஸ்திசுரம் தீரும்.

2. திரிலோக சூடாமணி மாத்திரை:[10]

சேரும் சரக்குகள்

சுத்தி செய்த கௌரி பாடாணம்

சுத்தி செய்த ரச கற்பூரம்

கஞ்சா

கோரைக்கிழங்கு

வெடியுப்பு

கற்கடக சிங்கி

அதிமதுரம்

அக்கரகாரம்

இச்சரக்குகளை எலுமிச்சம்பழச் சாற்றால் 1 சாமமும், இஞ்சிச்சாற்றால் 4 சாமமும் முலைப்பாலால் 2 சாமமும் அரைத்து சிறுபயிறு அளவு மாத்திரை செய்து ½ - 1 மாத்திரை அளவு கொடுக்கவும்

தீரும் நோய்கள்:

சன்னி ___ 13

தோசம்

வாதம் - 80

3. அவிபத்திச் சூரணம்:[11]

சேரும் சரக்குகள்

நெல்லி முள்ளி — வாய்விடங்கம்

கடுக்காய்த் தோல் — மிளகு

சுக்கு — ஏலக்காய்

இலவங்கப்பத்ரி — இலவங்கப்பட்டை

திப்பிலி — கோரைக்கிழங்கு

- இவைகள் வகைக்கு 1 பலம்

சிவதை வேர்ச்சூரணம் - 3 பலம்

அளவு - 1 வராகன்

அனுபானம் - வெந்நீர்

தீரும் நோய்கள்

சூலை, அக்கினி மந்தம், **வாதநோய்,** பித்த ரோகங்கள்

4. ராஜ மார்த்தாண்ட லேகியம்:[10]

அளவு - பாக்களவு

நாள் - 2 வேளை, 48 நாள்

தீரும்நோய்கள் - **வாதம் 80,** குன்மம் 8, பீநிசம், சன்னி, சுரம், வாந்தி, அக்கினிமந்தம்

5. **புடலாதி குக்கில் நெய்:**[7]

அளவு- 1 ¼ - 1 ½ வராகன், 1 வேளை மேலுக்கும் உபயோகிக்கவும், நசியமும் செய்யவும்..

தீரும்நோய்கள்:

எல்லா வகை வீக்கங்கள், **வாதம்,** எல்லா வகை புண்கள், கண்டமாலை, பவுத்திரம், பிரமேகம், சோகை, குன்மம், **பலமான நோய்க்கு இதுவே சஞ்சீவி.**

6. **ஓசாதிபதி லேகியம்:**[10]

அளவு ___ 1 வராகன், 2 வேளை

தீரும் நோய்கள்:

வாதம் - 80, பித்தம், கிரிச்சரம், சூலை, குன்மம், பாண்டு, சோகை, மேகம்.

கோரைக்கிழங்கு சேரும் பிற மருந்துகள்

1. கட்டுவாதி மாத்திரை[4]
2. அறுகம்வேர் தைலம்[4]
3. ஜகன் மோகனப் பொடி[4]
4. கருணைக் கிழங்கு லேகியம்[4]
5. சுரஹர மாத்திரை[8]
6. சந்தனக் குடிநீர்[8]
7. காமகளா ரசம்[6]
8. சீரகாதி இளகம்[7]
9. தாளிச இளகம்[7]
10. மன்மத காமினி லேகியம்.[7]
11. தனிவாத சுரக் குடிநீர்[8]
12. பித்த சுரக்குடிநீர்[8]
13. கபசுரக் குடிநீர்[8]
14. குளிர்சுர குடிநீர்[8]

15. பயித்திய சுரக்குடிநீர்[8]
16. தோசமாத்திரை[9]
17. வில்வாதித்தைலம்[9]
18. சகல சுரநாசத் தைலம்[9]
19. திரிலோச்சன கிருதம். [10]
20. மகா அசுவகந்தி ரசாயனம்.[10]
21. இங்குவாதி உருண்டை[11]
22. சாதிலிங்க குளிகை[11]
23. சந்தனாதிச் சூரணம்[12]
24. சம்பீரத் தைலம்.[12]

BOTANICAL ASPECT

CYPERUS ROTUNDUS *Linn.*

CLASSIFICATION:

Kingdom	-	Plantae
Subkingdom	-	Tracheobionta
Superdivision	-	Spermatophyta
Division	-	Magnoliophyta
Class	-	Monocotyledons
Subclass	-	Commelinidae
Order	-	Cyperales
Family	-	Cyperaceae
Genus	-	Cyperus
Species	-	rotundus

VERNACULAR NAMES[18]

Tamil	-	Korai Kizhangu
English	-	Nut grass
Hindi	-	Nagarmotha, Motha
Kannada	-	Tungegadde, Tungahulli
Malayalam	-	Muttanna
Sanskrit	-	Musta, Mustaka
Telugu	-	Tunga, Musta

HABITAT:[18]

Throughout India, as a weed upto an elevation of 2000m.

HABIT:[21]

This is grass like herb. It has tuberous roots or rhizomes that are fragrant. It is a perennial plant, which may reach a height of upto 40cm.

Tuber	-	Hard, ovoid, tunicate black fragrant 0.8-2.5 cm dm
Root	-	Fibres clothed with flexuous hairs
Stems	-	Subsolitary 10-75 cm long, triquetrous at the top, sometimes tuberous at the base.
Leaves	-	Shorter or Larger than the stem, narrowly linear 4-8mm broad.
Umbel	-	Simple or compound, ray 2-8. The inflorescence sometimes contracted into a head, occasionally of only one spikelet.

CHEMICAL CONSTITUENTS:[22]

Chemicals include 1,8 – cineole, 4-α, 5- α, oxidoeuderm-11-en-3- α-ol, α-cyperone, α-rotunol, β-cyperone, β-pinene, β-rotunol, β-selinene, camphene, cyperene, cyperol, cyperolone, D-epoxyguaiene, D-fructose, D-glucose, flavanoids.

γ-Cymene, Iso-cyperol, Linoleic acid, Linolenic acid, Magnesium, Manganese, Mustakone, Myristic acid, Oleanolic acid, Oleic acid, P-cymol, Pectin, polyphenols, Rotundene, Rotundenol, Rotundone, Sitosterol, Stearic acid, Sugeonol.

PHARMOCOLOGICAL ACTIVITES:[22,23]

The essential oil exhibited transquillising activity.

The alcoholic extract exhibited diruetic effect in rats.

The extract showed protection against diarrhoea.

It was found in animal studies that water and alcoholic extracts of cyperus rotundus exhibited Lipolytic action to mobilise fat from adipose tissues & helps in the reduction of obesity.

Experiments showed that the drug is effective in rats and humans by releasing enhanced concentration of biogenic amines from nerve terminals of the brain. This suppresses an appetite centre.

Sitosterol exhibited significant antipyretic effect against pyrexia by Brewer's yeast.The result was compared with acetyl salicylic acid.

MATERIALS AND METHODS

COLLECTION OF DRUG:

The drug Korai Kizhangu was collected from the indigenous raw drug stores, Tambaram. Its botanical identity was authenticated by Botany Professor of National Institute of Siddha. The tubers were dried in sun shade.

PREPARATION OF DRUG:

Korai Kizhangu is rinsed thoroughly with water and dried. Then it is grinded into fine powder. Then the powder is placed on the cloth tied in the mouth of mud-pot containing mixture of milk and water. Then the powder is heated by steam until the milk and water mixture is boiled upto 2/3 of initial quantity.

STORAGE OF CHOORNAM:

The Choornam was stored in a dry air-tight container. Life span of choornam is 3 months from the date of preparation. It was used within that period.

INTENDED THERAPEUTIC DOSE & DURATION

1 gm two times a day with honey, after food for 48 days.

BIO CHEMICAL ANALYSIS

CHEMICAL ANALYSIS OF KORAI KIZHANGU CHOORNAM

SI. NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of the sample	Dark green colour	
2.	**Solubility:** a. A little of the sample is shaken well with distilled water b. A little of the sample is shaken well with con Hcl/con H_2SO_4	Sparingly soluble Completely soluble	 Absence of silicate
3.	**Action of Heat:** A Small amount of the sample is taken in a dry test tube and heated gently at first and then strongly	White fumes gas not evolved No brown fumes	Absence of carbonate Absence of Nitrate
4.	**Flame Test:** A Small amount of the sample is made in to a paste with con. Hcl in a watch glass and introduced into non-luminous part of the Bunsen flame	Bluish green colour flame is appeared	Presence of Copper
5.	**Ash Test:** A filter paper is soaked into a mixture of sample and add cobalt nitrate solution and introduced into the Bunsen flame and ignited	Yellow colour flame not appeared	Absence of sodium

PREPARATION OF EXTRACT:

5gm of Korai kizhangu choornam is weighted accurately and placed in a 250ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

SL.NO	EXPERIMENT	OBSERVATION	INFERENCE
I	**Test For Acid Radicals**		
1.	**Test For Sulphate**: a. 2ml of the above prepared extract is taken in a test tube, to this, add 2ml of 4% ammonium oxalate solution b. 2ml of the above prepared extract is added with 2ml of dil, Hcl is added until the effervescence ceases off. Then 2ml of Barium chloride solution is added	No cloudy appearance present. No white precipitate insoluble in con, Hcl	Absence of sulphate. Absence of sulphate.
2.	**Test For Chloride**: 2ml of the above prepared extract is added with dill. HNO3 till the effervescence ceases. Then 2ml of silver nitrate solution is added	No cloudy appearance	Absence of chloride
3.	**Test For Phosphate**: 2ml of the extract is treated with 2ml of ammonium molybdate solution and 2ml of con. HNO3	No cloudy yellow appearance	Absence of Phosphate
4.	**Test For Carbonate**: 2ml of the extract is treated with 2ml of magnesium sulphate solution.	No cloudy appearance	Absence of carbonate
5.	**Test For Nitrate:** 1gm of the substance is heated	No characteristic	Absence of Nitrate

	with copper turning and concentrated H_2SO_4 and viewed the test tube vertically down	changes	
6	**Test For Sulphide**: 1gm of the substance is treated with 2ml of con. Hcl	Colourless, no rotten egg smelling gas	Absence of sulphide
7.	**Test For Fluoride & Oxalate**: 2ml of extract is added with 2ml of dil acetic acid and 2ml of calcium chloride solution and heated	No cloudy appearance	Absence of fluoride and oxalate
8.	**Test For Nitrite**: 3 drops of the extract is placed on a filter paper, on that 2drops of acetic acid and 2 drops of benzidine solution is placed.	No reaction	Absence of Nitrite
9.	**Test For Borate**: 2 Pinches of the substance is made into paste by using sulphric acid and alcohol (95%) and introduced into flame	No Bluish green colour flame appeared	Absence of Borate
II	**Test For Basic Radicals**		
1.	**Test For Lead** 2ml of the extract is added with 2ml of potassium iodide solution	No yellow precipitate	Absence of lead
2.	**Test For Copper** a. One pinch of substance is made in to paste with con. Hcl in a watch glass and	Blue flame	Presence of Copper

	introduced into the non-luminous part of the Bunsen flame. b. 2ml of extract is added with excess of ammonia solution	Blue precipitate	Presence of Copper
3.	**Test For Aluminium**: To the 2ml of the extract sodium hydroxide is added in drops to excess	No characteristic changes	Absence of aluminium
4.	**Test For Iron:** a. To the 2ml of extract add 2ml of ammonium thiocyanate solution b. To the 2ml of extract add 2ml ammonium thiocynate solution and 2ml of con HNO_3 is added	Blood red colour is not appeared No red colour developed	Absence of Iron Absence of Iron
5.	**Test For Zinc** To 2ml of the extract sodium hydroxide solution is added in drops to excess	No white precipitate	Absence Zinc
6.	**Test For Calcium** 2 ml of the extract is added with 2ml of 4% ammonium oxalate solution	No Cloudy appearance, No white precipitate is obtained	Absence Calcium
7.	**Test For Maganese** To 2ml extract sodium hydroxide solution is added in drops to excess	No White Precipitate is obtained	Absence of maganese
8.	**Test for Ammonium**:	Mild reddish brown	Absence of ammonium

	To 2ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution are added	colour is not appeared	
9.	**Test for Potassium**: A pinch of substance is treated with 2ml of sodium nitrate solution and then treated with 2ml of cobalt nitrate in 30% glacial acetic acid	Yellowish precipitate is not obtained	Absence of Potassium
10.	**Test for Sodium** 2 Pinches of the substance is made into paste by using Hcl and introduced in to the blue flame, of Bunsen burner	Yellow colour flame not appeared	Absence of Sodium
11.	**Test for Mercury** 2 ml of the extract is treated with 2ml of sodium hydroxide solution	No yellow precipitate is obtained	Absence of Arsenic
12.	**Test for Arsenic**: 2ml of extract is treated with 2ml of silver nitrate solution	No brownish red precipitate is obtained	Absence of Arsenic
III	**Miscellaneous:**		
1.	**Test For Starch**: 2 ml of extract is treated with weak lodine solution	Blue colour developed	Presence of starch
2.	**Test for Reducing Sugar**: 5 ml of Benedicts qualitative solution is taken in a test tube and allowed to boil for 2 minutes	Green colour developed	Presence of Reducing sugar

	and added 8 to 10 drops of the extract and again boil it for 2 minutes. The Colour changes are noted		
3.	**Test for The Alkaloids**: a. 2ml of the extract is treated with 2ml of potassium iodide solution. b. 2ml of extract is treated with 2ml of picric acid. c. 2ml of the extract is treated with 2ml of phosphotungstic acid	No red colour develops No Yellow colour develops No white precipitate obtained	 Absence of Alkaloid Absence of alkaloid
4.	**Test for Tannic Acid**: 2ml of extract is treated with 2ml of ferric chloride solution	No black precipitate is obtained	Absence of Tannic acid
5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of potassium permanganate solution is added	Potassium Permanganate is decolourised	Presence of unsaturated compound
6.	**Test For Amino Acid:** 2 Drops of the extract is placed on filter paper and dried well	No Violet colour Obtained	Absence of amino acid
7.	**Test for Albumin**: 2ml of the extract is added with 2ml of ESBOCH'S reagent	No Yellow colour precipitate is formed	Absence of albumin
8.	**Test For Type of Compound**: 2 ml of the extract is treated with 2ml of ferric chloride solution	I. No green colour developed	I. Absence of oxyquinole epinephrine and

			Pyrocatechol
		II. No red colour developed	II. Anti pyrine Aliphatic amino acids and meconic acid are absent
		III. No violet colour developed	III. Apo morphine salicylate and resorcinol are absent
		IV. No blue Colour developed	IV. Morphine, Phenol, cresol and hydro-quinone are absent
		V. No black colour developed	V. Absence of Tannin

PHYSICAL PROPERTIES

Loss on Drying

5gms of material is heated in a hot oven at 105˚C to constant weight. The percentage of loss of weight was calculated.

Determination of ash Value

Weight accurately 2-3gms of sample in tarred platinum or silica dish and incinerate at a temperature not exceeding 450˚C until free from carbon, cool and weigh. Calculate the percentage of ash with reference to the air dried drug.

Acid Insoluble ash

Boil the ash for 5 minutes with 25ml of 1:1 dilute HCl. Collected the insoluble matter in Gooch- crucible on an ash less filter paper, wash with hot water and ignite, cool in a dessicator and weight. Calculate the percentage of acid insoluble ash with reference to the air dried drug.

Water Soluble ash

To the Gooch crucible containing the total ash, and 25ml of water and boil for 5 minutes. Collect the insoluble matter in a sintered glass crucible or on ash less filter paper. Wash with hot water and ignite in a crucible for 15 minutes at a temperature not exceeding 450˚C. Subtract the weight of the insoluble matter from the weight of the ash; the difference of weight represents the water soluble ash. Calculate the percentage of water soluble ash reference to the air dried drug.

Alkalinity of water soluble ash

5gms converted to ash, boiled with water, filtered, Filtrate was titrated against 0.1N of HCl using phenolphthalein as an indicator.

Alkalinity of water soluble ash=X x of acid / 0.1 x W.

X= Titre value

W= Weight of the materials taken

Alkalinity is given as ml of 0.1 N of HCL equal to 1gm

pH

5gms of Korai kizhangu chooranam is weighed accurately and placed in clear 100ml beaker. A few drops of Aquaregia was added and evaporated by heating for few minutes. After cooling the content, 50ml of distilled water is added to it and dissolved well. Wait for 30 minutes and then apply into PH matter at standard buffer solution at 4.0, 7.0 and 9.2.

PHARMACOLOGICAL STUDY

ACUTE TOXICITY STUDY

Honey was used as vehicle. Starting dose was 50mg/kg and the subsequent doses used were 100, 250, 500, 1000 2000 and 4000mg/kg p.o. *Korai Kizhangu Choornam* suspended in honey was administered to the groups of wistar rats in a single oral dose by gavage using a feeding needle. The control group received an equal volume of the honey vehicle. Six females and males were used for each dosage level. The principles of laboratory animal care were followed and the Department's ethical committee approved the use of the animals and the study design. Observations were made and recorded systematically 1, 2, 4 and 24 h after substance administration. The visual observations included skin changes, mobility, aggressiveness, sensitivity to sound and pain, as well as respiratory movements. They were deprived of food, but not water 16–18 h prior to the administration of the test suspension. Finally, the number of survivors was noted after 24 h and these animals were then maintained for a further 13 days and observations made daily. The toxicological effect was assessed on the basis of mortality, which was expressed as LD_{50}.

ANALGESIC ACTIVITY OF KORAI KIZHANGU CHOORNAM IN LABORATORY ANIMALS

EXPERIMENTAL

Animals:

Albino rats (120 to 150 g) or albino mice (20 to 30 g) of either sex were taken for the study. The analgesic activity was evaluated by administering the varying doses of drug orally 30 minutes before the experiment. The doses and time were selected based on preliminary screening method.

Analgesic effect:

This was investigated by using hot plate method and by acetic acid induced abdominal constriction assay procedure in mice. In the hot plate method the rats were placed on the hot plate at 55.0±1.0^{o}C and the time taken to lick the hind paw (reaction time) was noted. The animals having reaction time within 12 seconds were included in the study. The

chemical writhing method involved 10.0 mg/kg, *i.p.* injection of freshly prepared 0.6% acetic acid. The number of abdominal constrictions in the following 10 minutes were noted. Significant reduction either in the reaction time or abdominal constriction compared with vehicle treated animals was considered as antinociceptive response.

Statistical Analysis

The results were statistically analysed using one-way ANOVA followed by Dunnet's " *t* " test. P values <0.05 were considered significant.

ANTIINFLAMMATORY ACTIVITY OF KORAI KIZHANGU CHOORNAM IN ALBINO RATS

INTRODUCTION

Literature survey indicates the presence of multiple chemical constituents in this *Korai Kizhangu Choornam*. However, very few references about the evaluation of pharmacological activity of the *Korai Kizhangu Choornam* are available. The *Korai Kizhangu Choornam* are used for the treatment of inflammatory conditions. It was, therefore, decided to screen it for anti-inflammatory activity using animal models.

MATERIALS AND METHODS

Freshly prepared *Korai Kizhangu Choornam* was collected directly from the market and was authenticated. The pharmacological screening of the *Korai Kizhangu Choornam* was carried out by using standard protocols. The *Korai Kizhangu Choornam* was suspended in honey for administration to albino rats. Albino rats of 150-200 g were used for present investigation. They were kept in polypropylene cages in an air-conditioned area at 25 + 2^{o}C in 10-14 h light dark cycle. They were provided with balanced pellet feed and tap water *ad libitum*.

Formalin induced rat paw oedema:

Twenty four rats were divided into 4 groups of 6 rats each for various treatments as shown in Table 6. Subsequently 30 min after above treatment, 0.1ml of 1% formalin was injected subcutaneously into the planter region of right hind paw to induce oedema. The paw volume was measured initially and at 1, 2, 3 and 4 h after formalin injection using plythesmographic method. Percentage inflammation was calculated for comparison.

STATISTICAL ANALYSIS:

The data were analyzed using one-way analysis of variance. One-way ANOVA were carried out for the analysis to determine significant overall effects ($P< 0.05$).

STUDY OF CALCIUM DEPLETION ACTIVITY OF KORAIKIZHANGU CHOORNAM IN RODENTS

INTRODUCTION:

The time of greatest need for consistent, adequate amounts of calcium in the diet is during times of rapid growth as in childhood, pregnancy and lactation, to ensure healthy development and maintenance of bones and teeth. Calcium metabolism is dependent on many other substances. The presence of vitamin D in the form of calciferol is vital for calcium to be absorbed from the intestines. One study looking at calcium supplementation and increases in bone density found that when given with vitamins and other minerals, efficacy of absorption increased almost three times over just calcium supplementation alone. This needs to be a consideration in the treatment of osteoporosis.

Three regulatory mechanisms control serum calcium, the blood calcium level. This is very tightly controlled in a narrow range and primarily it is the kidneys that keep it within this narrow window of normal. Low levels of calcium can cause hypertension by decreasing the vasodilatory response of blood vessels. This is the type of hypertension effectively treated by calcium supplements and checking a serum calcium level on newly diagnosed hypertension is an important part of the initial workup. Calcium supplementation may help, but is not a recommended treatment for other forms of hypertension.

Calcium plays a vital role in the muscle contraction-relaxation cycle. The most important muscle in the body, the heart, is dependent on calcium for healthy functioning. Calcium regulates cell wall permeability and the passage of fluids through cell membranes. Calcium activates enzymes involved in fat digestion and protein metabolism. A recent study showed a decrease in rates of obesity in persons taking calcium supplements on a regular basis.

Other Facts:

Phosphorous displaces calcium. It increases urinary calcium excretion. As serum calcium levels go down as a result of this, calcium is leached from bones and teeth eventually weakening them. Calcium is a macromineral, as is magnesium, and the amount needed by the body per day is much higher than the microminerals, such as zinc. As such, the macrominerals can interfere with the absorption of the microminerals. The bulk of the macrominerals are probably best taken at a time separate from any micromineral supplementation that has been recommended. The medical profession believes that, except for gross excess or deficiency, nutrition is of little importance to overall health, the information has been largely ignored.

Calcium

Calcium in the body must be tightly controlled because it is necessary to cell function for such things as blood clotting, muscle contraction, enzyme reactions, cellular communication and skin differentiation. It also gives bones and teeth their strength. In fact, the hardest substance in the human body, tooth enamel, is 95% calcium. Calcium is rather deficient in the environment. The body has developed special mechanisms to extract calcium from dietary sources. Normal adults adapt to decreased calcium intake by increasing the fraction of dietary calcium absorbed, but absorption is impaired by aging. Some 30-60% of dietary intake is normally absorbed. Several hormones are involved in calcium metabolism. Two protein hormones, parathyroid hormone and calcitonin, and a derivative of Vitamin D act to make sure the body optimally assimilates dietary calcium.

A deficiency of calcium results in rickets in children and osteomalacia, both of which display a lack of bone mineralization. Calcium deficiency may also contribute to osteoporosis. Magnesium appears to be involved in the regulation of calcium levels; therefore if magnesium levels are low, calcium levels may also be low and unresponsive to treatment unless magnesium levels are corrected. Signs of a deficiency include loss of appetite, irritability, disorientation, convulsions, and abnormal behavior.

Drugs can alter the ability of the body to digest, absorb, synthesize, transport, store, metabolize or eliminate nutrients. This situation potentially can cause Nutrient Depletion. Quite often, a patient is then placed on additional medication to combat a new set of

symptoms. The cascading effect of such an approach to disease management often leads to a reduction in the patient's quality of life. In view of these factors, an attempt was made to study the calcium depleting action of korai kizhangu choornam in animal models.

AIM OF THE STUDY:

a) Femur dry weight measurement during Korai kizhangu choornam treatment.
b) Changes in biochemical parameters in serum.
c) Histological analyses of cross sections prepared at the tibiofibular junction.
d) Estimation of serum parathyroid hormone.

EXPERIMENTAL:

Animals

Wistar Albino rats either sex weighing 150-200gm were selected. They were kept in separate cages in different groups and fed with balanced pellet diet and water *ad libitum*. 24 animals were selected and they were divided into 3groups in such a way that each group contains 6 animals. The animals were deprived of food and water for 18hrs prior to the commencement of experiment. The drug treatment pattern was as follows

Group I (control) - served as control and received 5ml of saline by oral route.
Group II (Test I) - served as test and received KKC (200mg/kg)
Group III (Test II) - served as test and received KKC (400mg/Kg)

After treatment the animals were kept in the metabolic cage. The urine was collected in a measuring cylinder for 5 hours. The bladder was emptied by pulling the base of the tail of each rat. The total difference in the collected urine volume of the respective test group was compared with normal control group. The results were tabulated (table 7). The calcium concentration was measured by standard method.

Serum analysis:

After the experimental period, blood was collected from the retro-orbital of eyes of rats under anaesthetic conditions and animals were sacrificed by cervical decapitation. Serum was separated by centrifugation at 10,000x g for 10 min and analysed for calcium and parathormone.

Histopathological analysis:

The tibiotarsal joint of the animals was isolated and subjected for the histopathological study.

Statistical analysis:

Results were expressed as mean ± standard deviation. Statistical analysis of the test results was carried out by one-way ANOVA, followed by Dunnet's multiple comparison test. The p value <0.05was considered as significant.

SIDDHA ASPECT

குதிகால் வாதம்

குணம்:

சிலருக்கு குதிகாலில் ஊன்ற முடியாத வலி ஏற்பட்டு, எழுந்தவுடன் நடக்க முடியாது. நடக்க நடக்க வலி சிறிது குறையும். இது மேடுபள்ளமுள்ள தரையில் காலணி இல்லாமல் நடப்பதால் உண்டாகிறது.

குதிகாலின் உட்புறம் வலியிருக்கும். காலைத் தரையில் ஊன்ற முடியாது. ஊன்றினால் குத்தல் வலி எடுக்கும். இதைத் தான் குதிகால் வாதம் என்று கூறுவார்கள்.

வீறிடநரம்புதன்னை வேதனை செய்யும் மேனி
சீறிடவலிக்கும் காலை திமிர்ப்புடன் நடயிலாக்கும்
மீறிய தேளைப்போலே ஊன்றிடவலிக்குமாகில்
கூறிய குணங்கள் மெய்யே குணங்குதிவாதமாமே'..

கருத்துரை:

குதிகால் வாதம் ஏற்பட்டால் நரம்புகளில் வேதனை உண்டாகும். கால் வலிக்கும். திமிர்ப்புண்டாகும். காலை கீழே ஊன்றினால், தேள் கொட்டினாற்போல் வேதனையுடன் தரிப்பு. குத்தல் உண்டாகும்.

குதிதான் வீங்கிகடுத்து நொந்து குத்தும்குடையும்
நடயுமில்லை சரீரமதிலே நோவெடுத்து தக்கநரம்பு
தான் திமிர்த்து _ _ _ _ _ _ _ _ _ _ _ _

கருத்துரை:

குதிவாத நோய் ஏற்பட்டால் குதிகால் வீங்கி கடுத்து வேதனை தரும். குத்தலும், குடைச்சலும் ஏற்பட்டு நடக்க இயலாது. உடலில் வேதனை தோன்றும். நரம்புகளில் திமிர்ப்பு காணும்.

மேவியேமுழங்காலின்கீழ் மிகுத்திடுவாதந்துய்த்து
ஆவியுமழிக்குமெத்த அடியதுவைக்கெட்டாது
தாவியேகுதியினுள்ளே தக்கதாய்திரண்டிருக்கும்
பாவியாங்குதிவாதத்தின் பரியதுயென்றுகூறே

- யூகி முனி வைத்திய காவியம்

முழங்காலின் கீழ்வாதம் மிகுந்து அடி எடுத்து வைக்கவிடாது உயிர்போகுமாறு வலியெடுக்கும், குதிகாலில் வாதம் திரண்டிருக்கும். இவை குதிவாதத்தின் குணங்களாகும்.

MODERN ASPECT

Calcaneal Spur

Definition: An association and calcification resulting from traction of plantar fascia upon the periosteum (covering of bone) of the inferior surface of the calcaneum.

Causes of Heel Spurs:

1. Being overweight
2. Improper Footwear
3. Weak calf muscles tend to add pressure to the foot region
4. Plantar fascitis

Mechanism of Injury:

There is stress at the plantar (bottom of the foot) aspect of the calcaneus (heel bone) at the attachment of the plantar aponuerosis. This stress is caused by excessive running, standing, or walking especially when the individual is unaccustomed to the activity.

Symptoms:

(i) Constant pain on the undersurface of the heel, which sometimes radiates from the anterior portion into the rest of the plantar aspect of the foot.

(ii) Pain occurs on standing, walking and it is relieved by rest.

Signs:

(i) Localized tenderness is found over the medial portion of the spur.

(ii) Slight swelling may be observed.

(iii) Passive dorsiflexion of the toes may accentuate the pain.

Radiographic Appearance:

Radiographs will show a spur. The lateral radiograph is the best view for visualization of this condition, the spurs are frequently bilateral and may be asymptomatic, most centres image both sides.

CLINICAL STUDY

For this dissertation study 30 patients were selected and 10 patients were admitted in National Institute of Siddha, Gunapaadam IN-Patient ward and 20 patients were treated in Out-Patient department with the trial drug.

SELECTION CRITERIA:

Inclusion Criteria

- Age group 20-60 years
- Willing to attend the OPD once in a week for 7 weeks
- Heel Pain
- X-ray heel shows calcaneal growth.

Exclusion Criteria

- Rheumatoid Arthritis
- Gout
- Osteo-arthritis
- Osteo-malacia
- Osteo-porosis
- Osteo-sarcoma
- Malignancy

Withdrawal Criteria

- Drug Intolerance
- Any other acute illness

Line of treatment

The drug Korai kizhangu choornam was administered internally in dose of 1 gm two times a day with the vehicle honey, after food.

Diet restriction

Patient were advised to avoid:

Tomato, Cabbage, Cauli flower, Potato, Green plantain, Tamarind, Brinjal, Bitter guard and Sesban.

RESULTS AND OBSERVATION

Results of Bio-chemical analysis of Korai Kizhangu Choornam :

Table 1. STANDARDISATION PARAMETERS

Sl.No	Parameter	Results
1.	Loss of drying @ 105º C, (%)	0.52
2.	Ash Value @ 550º C, (%)	24.29
3.	Water Soluble (%)	6.77
4.	Alkalinity as $CaCo_3$ in water soluble Ash (%)	0.28
5.	Acid Insoluble Ash (%)	0.51
6.	pH at 10% aqueous solution	5.54

Table 2. QUALITATIVE ANALYSIS:

S.NO	PARAMETERS	RESULTS
1	Copper	Present
2	Manganese	Present
3	Starch	Present
4	Unsaturated Compound	Present
5	Reducing Sugar	Present

RESULTS OF PHARMACOLOGICAL STUDIES:

ACUTE TOXICITY-RESULTS OF KORAI KIZHANGU CHOORNAM

No death was recorded during the treatment period in either the control or treated groups given upto the maximum of 4g/kg of **Korai Kizhangu Choornam** orally. The animals did not show any major changes in general behavior or other physiological activities. There were no significant behavioural changes and toxic symptoms were observed in treated groups of male and female rats. But the symptoms like continuous grooming, aggressive behaviour at high dose range, mild sedation, abdominal muscle twitch in few animals was generally observed in the animals (Table-3). No pathological alterations were grossly detected in vital organs after sacrificing. The organs of treated groups were unremarkable and comparable to each sex. This test limit for acute oral toxicity is generally considered to be 4.0 g/kg body weight.

Table-3. Incremental dose finding experiment and its Signs of Toxicity

No	Treatment	Dose mg/kg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	I	50	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	II	100	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	III	250	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	IV	500	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	V	1000	-	-	-	+	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
6	VI	2000	-	-	-	+	-	-	-	-	-	-	+	+	+	-	-	+	-	-	-	-
7	VII	4000	-	+	+	+	+	-	+	+	-	-	+	+	+	-	-	+	-	-	-	-

1. Alertness 2. Aggressiveness 3. Pile erection 4. Grooming 5. Gripping 6. Touch Response 7. Increased Motor Activity 8. Tremors 9. Convulsions 10. Muscle Spasm 11. Catatonia 12. Muscle relaxant 13. Hypnosis 14. Analgesia 15.Lacrimation 16. Exophthalmos 17. Diarrhoea 18. Writhing 19. Respiration 20. Number of Deaths (Mortality)

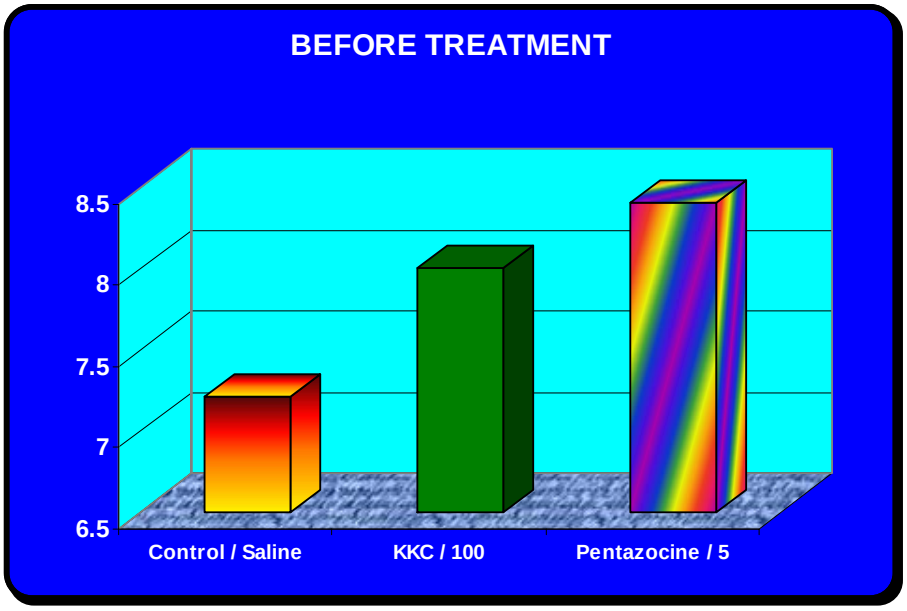
RESULTS OF ANALGESIC ACTIVITY OF KORAI KIZHANGU CHOORNAM

*Korai Kizhangu Choornam 400*mg/kg increased significantly the paw licking time (Table 4). Korai Kizhangu Choornam in mice significantly decreased (Table 5) the number of chemical writhings in 10 min compared to control group.

Table 4. Effect of *Korai Kizhangu Choornam* by hot plate method in rats.

Drug and Route	Dose (mg/kg)	No.of animals	Reaction time before treatment	Reaction time (Sec) after KKC treatment (mean±SEM)			
				15min^{NS}	30min	45min	60min
Control	Saline	6	7.21±1.60	8.51±1.09	8.22±0.70	12.30±1.0	12.15±1.60
KKC	100	6	8.0±1.55	8.22±0.70	9.18±0.75	12.12±1.0*	11.90±1.11
Pentazocine	5	6	8.41±1.02	8.16±1.65	10.16±1.18*	14.10±1.50**	12.60±2.72*

Significance relative to control *P<0.05; **P<0.01; ns=not significant. N=6



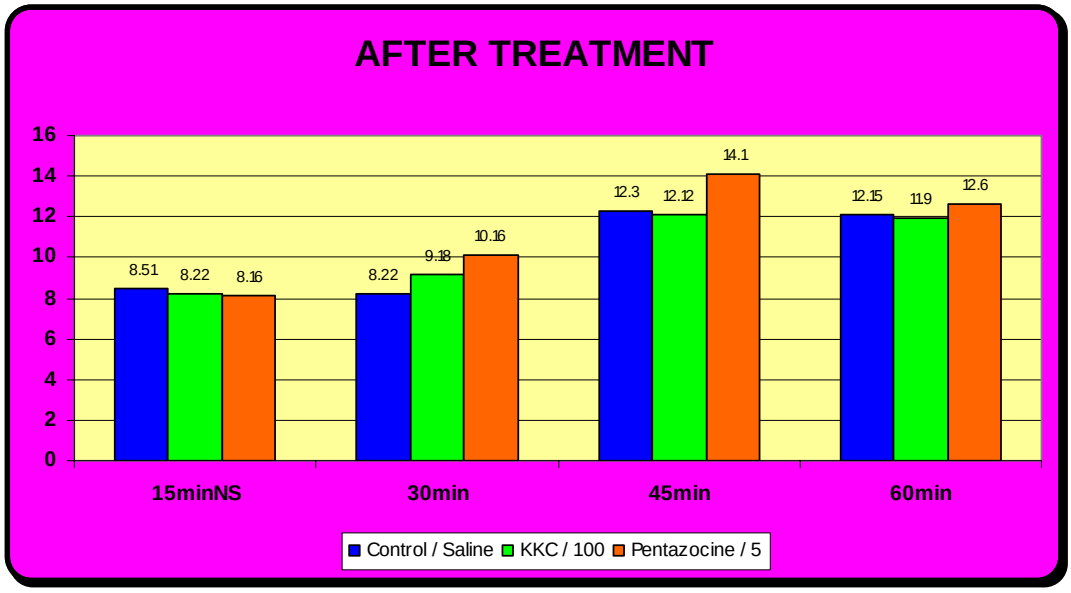
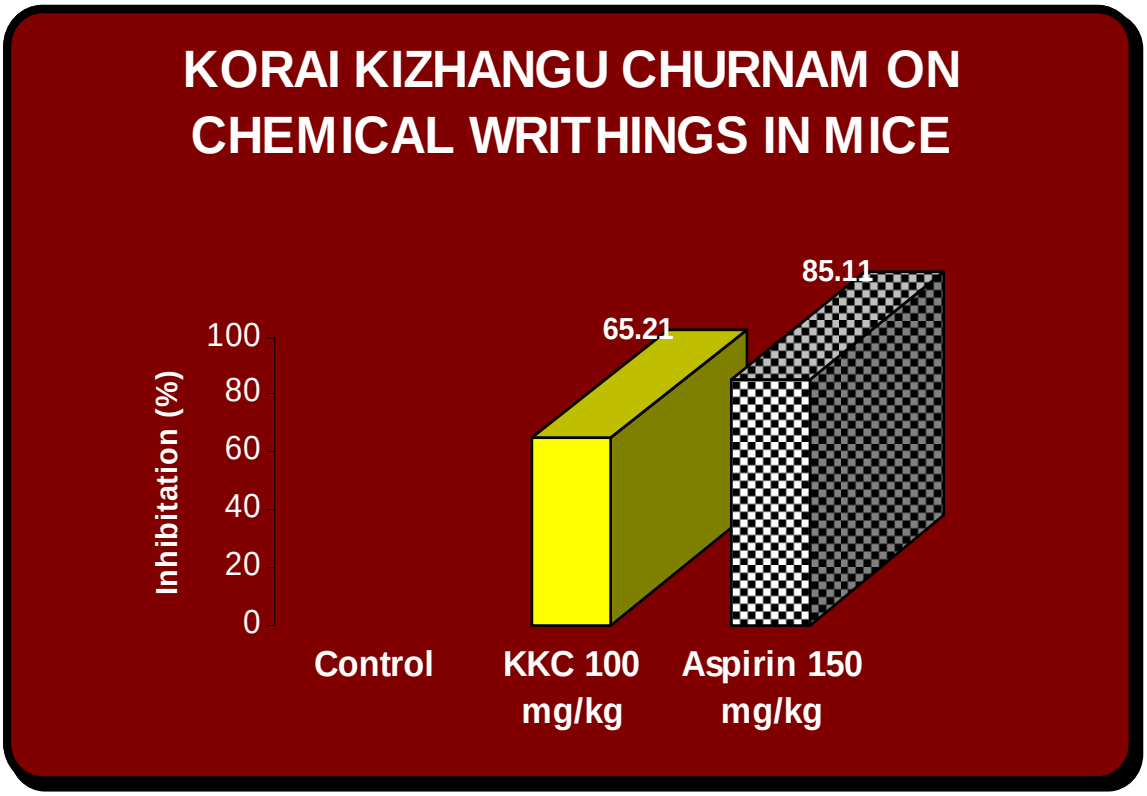


Table 5. Effect of *Korai Kizhangu Choornam* on chemical writhings in mice.

Experiment	Number of writhes	Inhibition (%)
Control	52.10±3.88	-----
KKC 100 mg/kg	33.45±2.52*	65.21
Aspirin 150 mg/kg	26.10±3.90**	85.11

Significance relative to control *P<0.05; **P<0.01; ns=not significant N=6



RESULTS OF ANTI-INFLAMMATORY ACTIVITY OF KORAI KIZHANGU CHOORNAM:

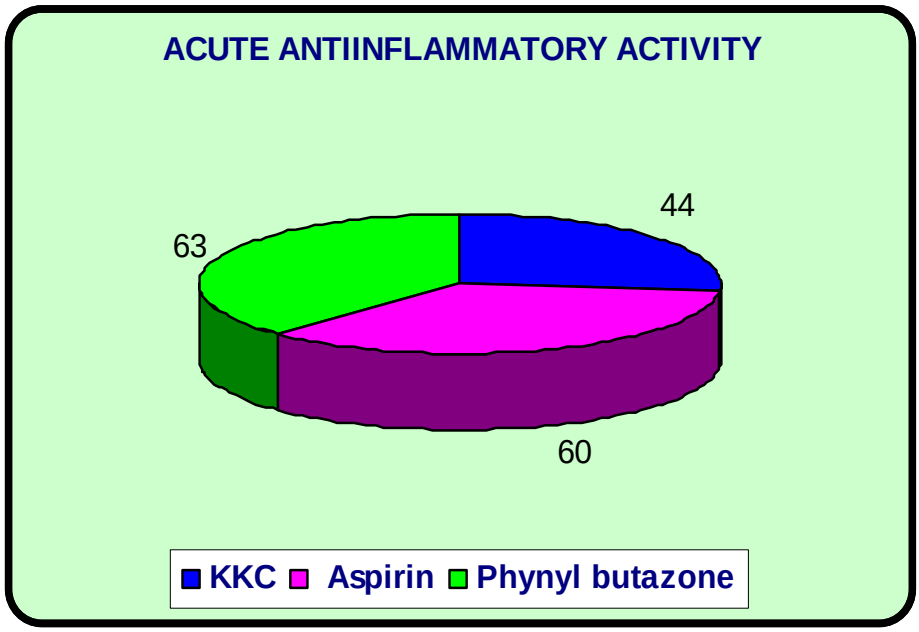
Formalin -Induced rat paw oedema:

The *Korai Kizhangu Choornam* as well as Aspirin & Phenyl butazone 20mg/kg showed antiphleogestic activity. This antiinflammatory activity was found to be statistically significant at the concentration, 400 mg/kg, (Table 6).

Table 6. Acute antiinflammatory activity of *Korai Kizhangu Choornam* on formalin induced rat paw oedema.

S.No	Treatment	Dose (mg/kg)	Mean increase in paw volume (ml)	% Inhibition
1	Control	2ml/kg	0.75±0.05	-
2	KKC	400	0.43±0.03*	44
3	Aspirin	150	0.31±0.07**	60
4	Phynyl butazone	20	0.28±0.06**	63

Significance relative to control *P<0.05; **P<0.01; N=6 Values are mean + SEM; n=6 in each group.



RESULTS OF CALCIUM DEPLETION ACTIVITY OF KORAI KIZHANGU CHOORNAM:

Results shows that Korai Kizhangu Choornam possess insignificant depleting action of calcium (P <0.01). There is significant kaliuretic and chloriuretic effect was observed in the Korai Kizhangu Choornam treated animals and their urine sample (Table no.7 and 8). Urine production is more in 400mg / kg of Korai Kizhangu Choornam at 24th hr

was moderately significant compared to control. The calcium, phosphate level in rats, calcium, phosphate level in blood serum and heamatological parameters has been shows to be moderately lowered.

Table-7. EFFECT OF KORAI KIZHANGU CHOORNAM ON SERUM AND URINARY PARAMETERS IN EXPERIMENTAL ANIMALS

S. No.	Parameter (U)	Group – I Normal	Group – II KKC (200mg/kg)	Group – III KKC (400mg/kg)
1.	Urine(mg/dl) Calcium Magnesium	 3.01±0.119 58.16±0.21	 4.55±0.067* 54.19±1.87	 5.15±0.042** 61.06±2.20
2.	Serum (mg/dl) Calcium Magnesium	 5.63±0.049* 55.00±0.09	 7.71±0.060* 56.14±1.46	 3.47±0.079** 74.10±0.60
3.	Parathormone	108.57±11.22	56.23±6.51	96.62±8.10*
4.	ALP	221.17±80.57	265.67±45.98	199.83±19.60
5.	TC	10427±601.34	14976±747.62**	12154±316.21**
6.	Femoral bone weight (in gms)	1.6gms	1.4gms	1.6gms
7.	SGOT	178.83±27.69	172±18.58	171±16.79
8.	SGPT	59.67±7.87	56.33±7.39	56.83±7.39
9.	PT	27.42±1.64	24.63±0.96	30.38±2.52
10.	CT	1.5min	1.8min	2.1min
11.	BT	2.1 min	2.0 min	2.0 min
12.	Calcitonin	>100	>48	>65

Significance relative to control *P<0.05; **P<0.01; ns=not significant. N=6

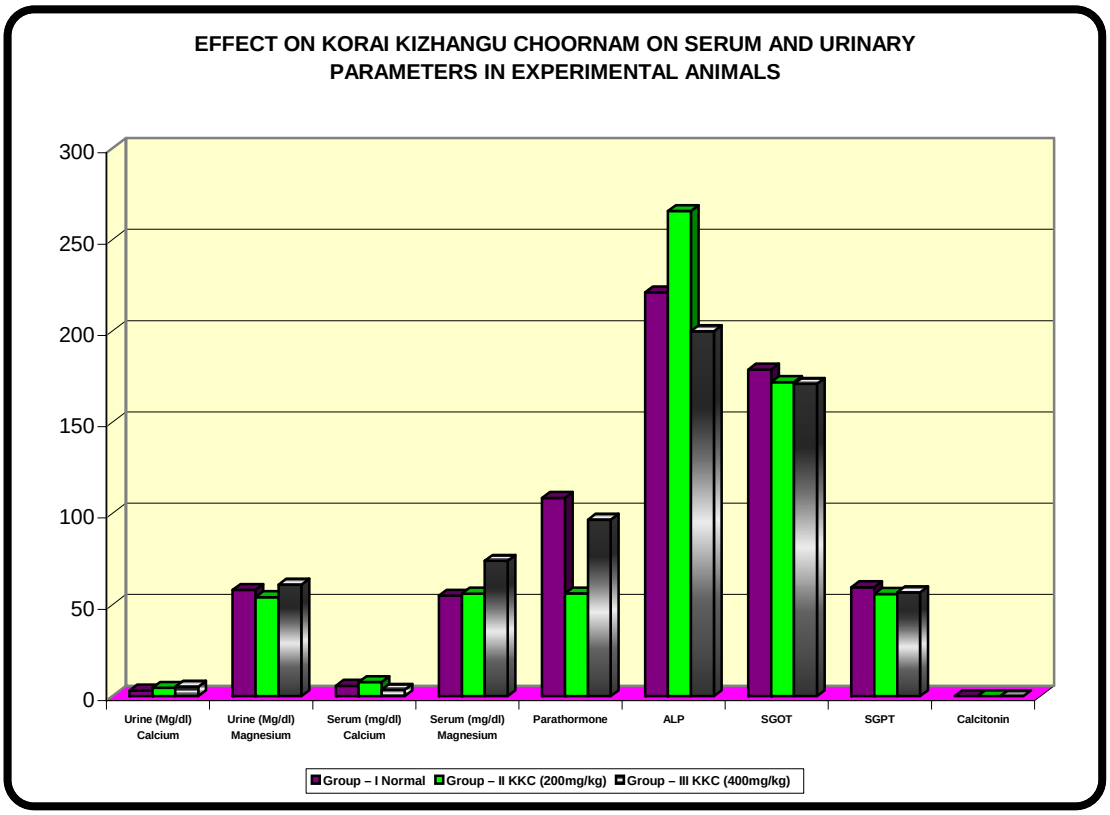
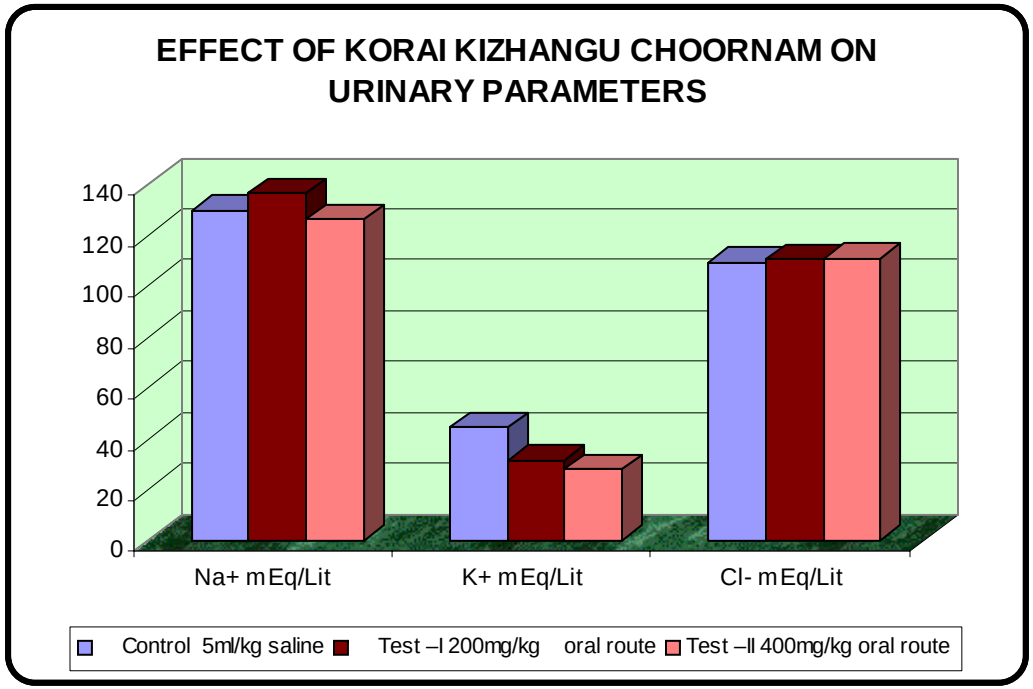

EFFECT ON KORAI KIZHANGU CHOORNAM ON SERUM AND URINARY PARAMETERS IN EXPERIMENTAL ANIMALS
300
250
200
150
100
50
0
Urine (Mg/dl) Calcium
Urine (Mg/dl) Magnesium
Serum (mg/dl) Calcium
Serum (mg/dl) Magnesium
Parathormone
ALP
SGOT
SGPT
Calcitonin
Group – I Normal
Group – II KKC (200mg/kg)
Group – III KKC (400mg/kg)

Table-8. EFFECT OF KORAI KIZHANGU CHOORNAM ON URINARY PARAMETERS

S. No.	No.of Animals	Treatment	Dose	Concentration of ions (Electrolytes)		
				Na^+ mEq/Lit	K^+ mEq/Lit	Cl^- mEq/Lit
1	6	Control	5ml/kg saline	129.64±10.50	44.52±2.17	109.31±11.80
2	6	Test –I	200mg/kg oral route	136.3±11.21	31.6±2.32**	110.37±9.12
3	6	Test –II	400mg/kg oral route	126.25±11.21	27.8±1.28*	110.83±8.82

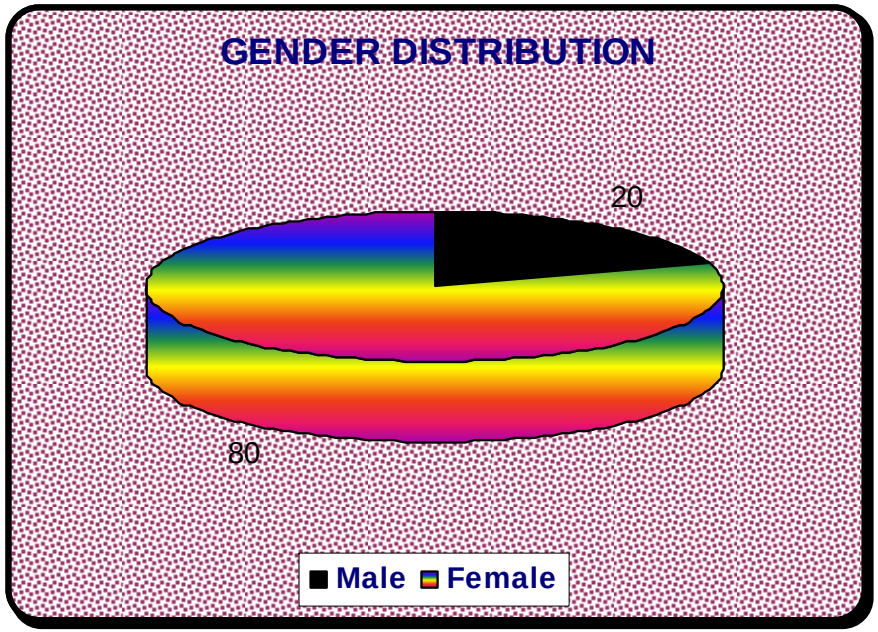
Significance relative to control *P<0.05; **P<0.01; ns=not significant. N=6


EFFECT OF KORAI KIZHANGU CHOORNAM ON URINARY PARAMETERS
140
120
100
80
60
40
20
0
Na+ mEq/Lit
K+ mEq/Lit
Cl- mEq/Lit
Control 5ml/kg saline
Test –I 200mg/kg oral route
Test –II 400mg/kg oral route

CLINICAL ASSESSMENT:

Table 9. Gender Distribution:

Gender	Cases	
	No.	Percentage
Male	6	20
Female	24	80
Total	30	100



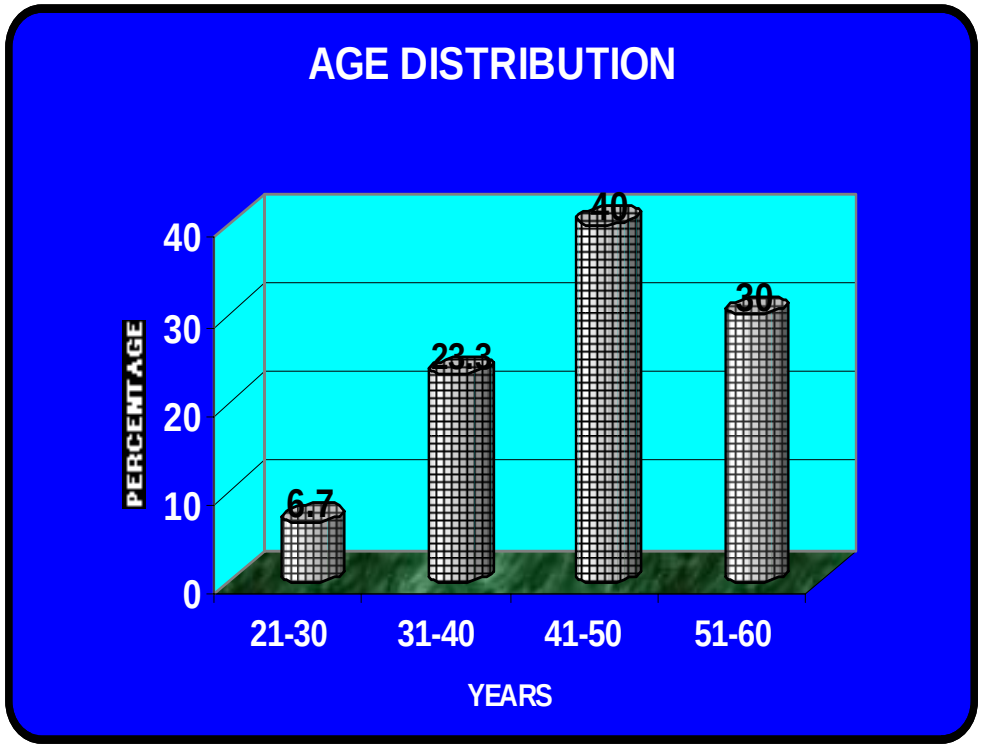
According to Gender distribution :-

20% of cases were in male.

80% of cases were in female.

Table 10. Age Distribution:

Age	Cases	
	No.	Percentage
21-30	2	6.7
31-40	7	23.3
41-50	12	40
51-60	9	30



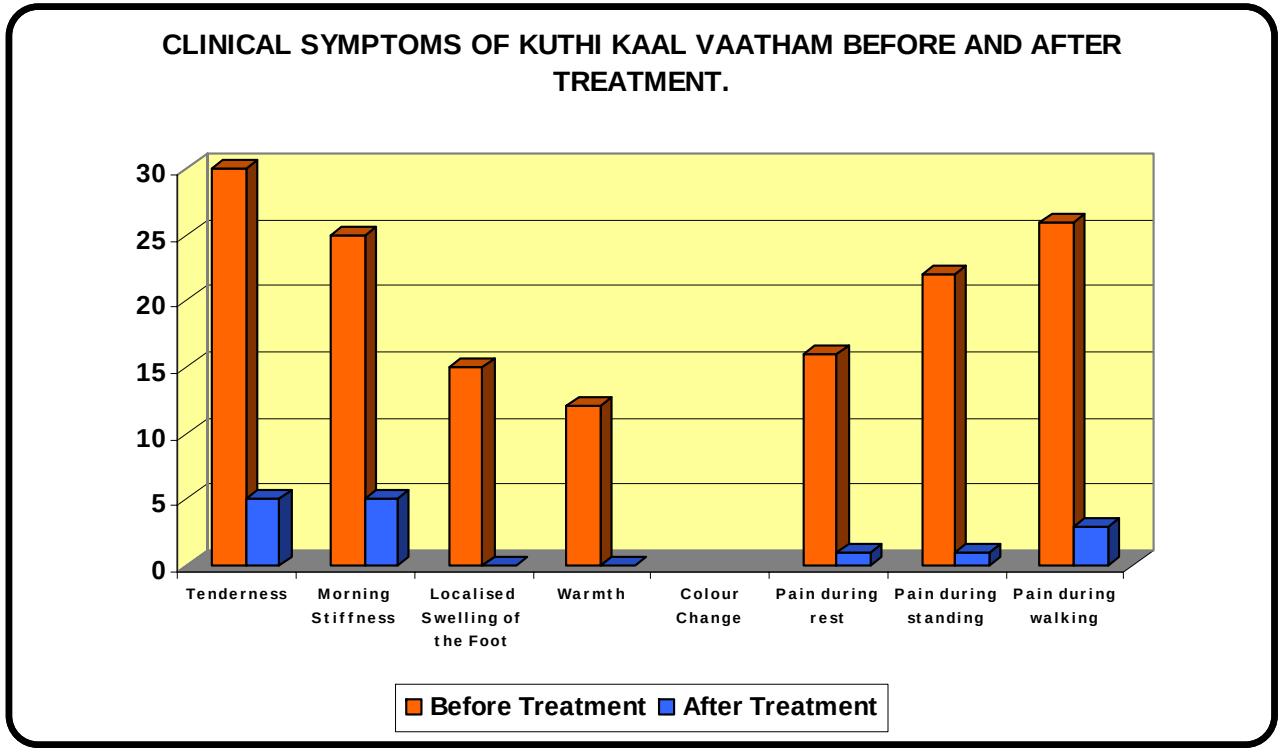
According to Age distribution :-

6.7% of cases were in below 30. **23.3% of cases were in below 40.**

40% of cases were in below 50. **30% of cases were in below 60.**

Table 11. Distribution of Clinical Symptoms of Kuthi Kaal Vaatham before and after treatment.

S. No	Signs & Symptoms	Before Treatment	After Treatment	Improvement
1	Tenderness	30	5	83%
2	Morning Stiffness	25	5	80%
3	Localised Swelling of the Foot	15	0	100%
4	Warmth	12	0	100%
5	Colour Change	-	-	-
6	Pain during rest	16	2	87.5 %
7	Pain during standing	22	3	86.36%
8	Pain during walking	26	3	88.5 %



OBSERVATION:

Tenderness:

Out of 30 cases with initial symptom of Tenderness only 5 cases had Tenderness AT. ie., 83% of cases did not have tenderness.

Morning Stiffness:

Out of 25 cases with initial symptom of Morning Stiffness only 5 cases had Morning Stiffness AT. ie., 80% of cases did not have Morning Stiffness.

Localised Swelling of the Foot:

Out of 15 cases with initial symptom of Localised Swelling of the Foot, no cases had Localised Swelling of the Foot AT. ie., 100% of cases did not have Localised Swelling of the Foot.

Warmth:

Out of 12 cases with initial symptom of Warmth, no cases had Warmth AT. ie., 100% of cases did not have Warmth.

Colour Change

No cases found to have colour change BT & AT.

Pain during rest:

Out of 16 cases with initial symptom of Pain during rest, only 2 cases had Pain during rest AT. ie., 87.5 % of cases did not have Pain during rest.

Pain during standing:

Out of 22 cases with initial symptom of Pain during standing, only 3 cases had Pain during standing AT. ie., 86.36 % of cases did not have Pain during standing.

Pain during walking:

Out of 26 cases with initial symptom of Pain during walking, only 3 cases had Pain during walking AT. ie., 88.5 % of cases did not have Pain during walking.

CASE SHEET OF KUTHII KAAL VATHAM PATIENTS

S NO.	O.P/ I.PNo	NAME	AGE/ SEX	TENDERNES		MORNING STIFFNESS		LOCALISED SWELLING OF THE FFOD		WARMTH		COLOUR CHANGE		PAIN DURING REST		PAIN DURING STANDING		PAIN DURING WALKING	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	AG781	Tamilselvi	27/F	+	-	+	+	-	-	-	-	-	-	-	-	+	-	+	-
2	AF8901	Kaveri	42/F	+	+	+	-	+	-	+	-	-	-	+	-	-	-	+	-
3	AG2076	Esther	53/F	+	+	+	+	+	-	+	-	-	-	+	+	+	-	+	-
4	AG2142	Vasantha	52/F	+	-	+	+	-	-	-	-	-	-	-	+	+	-	+	+
5	AG2157	Kowsalya	40/F	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	+
6	AG2470	Rose	40/F	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	+
7	AG2945	Anjali	46/F	+	+	+	-	+	-	-	-	-	-	+	-	+	-	+	-
8	AG3630	Rajalakshmi	50/F	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	-
9	AG3923	Muhammadimran	35/M	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	-
10	AG4081	Balakrishnan	42/M	+	-	+	+	+	-	+	-	-	-	-	-	+	-	+	-
11	AG4403	Pannerselvan	40/M	+	-	+	-	-	-	-	-	-	-	+	-	+	-	+	-
12	AG4413	Palaniyammal	40/F	+	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
13	AG5701	Santhi	42/F	+	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
14	AG5121	Sudha	32/F	+	-	+	-	-	-	--	-	-		-	-	-	-	-	-
15	AG6238	Arumaikan	43/F	+	-	+	-	-	-	-	-	-	-	+	-	-	-	+	-
16	AG6237	Manjula	29/F	+	-	+	-	-	-	-	-	-	-	-	-	+	-	+	-
17	AG6236	Baskaran	49/M	+	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
18	AG2945	Jothi	41/F	+	-	+	-	-	-	-	-	-	-	-	-	+	-	+	-
19	AG2114	Danalakshmi	46/F	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
20	AG5126	Amaravathi	36/F	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	-
21	782/IP	Govindammal	50/F	+	+	+	-	+	-	-	-	-	-	+	-	+	-	+	-
22	750/IP	Devi	45/F	+	+	-	-	-	-	-	-	-	-	+	-	-	+	+	-
23	787/IP	Vijayalakshmi	54/F	+	-	+	+	+	-	+	-	-	-	-	-	+	+	+	-
24	782/IP	Santhi	52/F	+	-	-	+	+	-	+	-	-	-	+	-	+	-	+	-
25	852/IP	Gangadevi	52/F	+	-	-	-	+	-	+	-	-	-	-	-	+	-	+	-
26	849/IP	Lakshmi	45/F	+	-	+	-	+	-	+	-	-	-	+	-	+	+	+	-
27	838/IP	Niraimathi	54/F	+	-	+	-	+	-	-	-	-	-	-	-	+	-	+	-
28	858/IP	Amaravathi	60/F	+	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-
29	1262/IP	Govindasami	40/M	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
30	1181/IP	Janarthanan	55/M	+	-	+	-	-	-	-	-	-	-	+	-	+	-	+	-

HAEMATOLOGICAL REPORT OF KUTHI KAALVATHAM PATIENTS

SNO	OP/IP NO	NAME	A/S	BEFORE TREATMENT							AFTER TREATMENT						
				TC Cells/ cumm	DC				ESR ½ /1 hr	Hb gm%	TC Cells/ cumm	DC				ESR ½ /1 hr	Hb gm%
					P%	L%	E%	M%				P%	L%	E%	M%		
1	AG781	Tamilselvi	27/F	6800	50	46	4	0	8/16	11.2	6900	48	48	2	0	4/8	12
2	AF8901	Kaveri	42/F	6900	52	44	3	1	6/15	11	7000	50	42	3	1	6/12	11.5
3	AG2076	Esther	53/F	7000	55	42	2	1	6/12	11.5	7000	50	40	2	0	6/12	11.5
4	AG2142	Vasantha	52/F	7200	50	45	5	0	5/12	11.6	7400	55	40	5	0	5/10	12
5	AG2157	Kowsalya	40/F	7200	54	43	6	0	3/6	12.1	7200	50	43	5	0	2/4	12
6	AG2470	Rose	40/F	5200	51	38	6	1	4/8	13.6	6000	50	34	6	0	2/4	13.2
7	AG2945	Anjali	46/F	6000	52	40	8	1	15/32	13.6	6500	51	40	8	1	10/20	13.6
8	AG3630	Rajalakshmi	50/F	6500	54	41	6	1	10/22	13.5	6800	51	40	6	1	10/20	15.5
9	AG3923	Muhammadimran	35/M	7000	50	41	3	0	4/8	15	7200	51	40	3	0	4/8	15.5
10	AG4081	Balakrishnan	42/M	6800	52	48	2	0	5/10	12.9	6800	50	40	2	0	5/10	13
11	AG4403	Pannerselvan	40/M	7200	56	40	4	0	6/12	13.6	7400	50	40	2	0	5/10	14
12	AG4413	Palaniyammal	40/F	7900	50	34	4	0	10/22	13.6	7900	56	30	4	0	5/10	14
13	AG5701	Santhi	42/F	8000	52	40	2	1	10/20	12.6	8500	50	40	2	0	5/10	13
14	AG5121	Sudha	32/F	7500	50	40	4	0	10/20	13.	7500	50	40	4	0	5/10	13.5
15	AG6238	Arumaikan	43/F	6500	60	44	2	0	10/22	12	6500	48	40	4	0	10/20	12
16	AG6237	Manjula	29/F	6000	54	40	4	1	5/10	10.3	6500	60	40	2	1	5/10	10
17	AG6236	Baskaran	49/M	7900	53	44	2	0	5/10	12.1	7800	52	40	2	0	5/10	12
18	AG2945	Jothi	41/F	7100	52	42	4	0	8/16	12.5	7100	52	40	4	0	5/10	12
19	AG2114	Danalakshmi	46/F	6500	50	46	2	1	5/10	12.1	6500	50	40	2	1	5/10	12.1
20	AG5126	Amaravathi	36/F	7200	52	40	4	1	5/10	13	7000	50	40	4	0	5/10	13
21	782/IP	Govindammal	50/F	7000	52	40	4	1	4/8	11	7000	52	40	3	0	4/8	11.5
22	750/IP	Devi	45/F	7200	51	40	3	0	2/4	13.1	7000	50	40	2	0	2/4	13
23	787/IP	Vijayalakshmi	54/F	6500	50	40	2	0	6/12	13.1	6500	50	35	2	0	6/12	13
24	782/IP	Santhi	52/F	7400	60	40	4	0	6/12	12	7500	50	40	4	0	6/12	12
25	852/IP	Gangadevi	52/F	7600	56	29	11	0	68/136	11	7200	60	20	10	0	30/60	11
26	849/IP	Lakshmi	45/F	7800	52	39	5	0	6/12	12.6	7800	50	40	4	0	6/12	12
27	838/IP	Niraimathi	54/F	7000	54	45	3	1	8/16	11	7000	50	40	3	0	8/16	10
28	858/IP	Amaravathi	60/F	8100	59	40	4	0	12/24	9.5	8000	54	40	3	0	10/20	9.5
29	1262/IP	Govindasami	40/M	6900	50	33	8	0	48/96	11.8	7000	50	30	6	0	12/24	11
30	1181/IP	Janarthanan	55/M	7000	52	35	3	0	2/4	11.8	8100	52	42	6	0	8/16	11

HAEMATOLOGICAL REPORT FOR KUTHI KAALVATHAM PATIENTS

SNO	OP/IPNO	NAME	A/S	BEFORE TREATMENT						AFTER TREATMENT					
				TRBC/ millions	RBS mgm/dl	Urea mg%	Uric acid mg%	Creatinine mg%	Cholesterol mg%	TRBC/ millions	RBS mgm/dl	Urea mg%	Uric acid mg%	Creatinine mg%	Cholesterol mg%
1	AG781	Tamilselvi	27/F	3.7	88	20	2.5	0.8	138	3.8	88	21	2.5	0.7	134
2	AF8901	Kaveri	42/F	3.8	108	29	3	0.8	164	3.8	105	25	3	0.8	162
3	AG2076	Esther	53/F	3.2	105	25	2.5	0.9	162	3.4	108	25	3.5	0.9	160
4	AG2142	Vasantha	52/F	3.5	146	27	2.5	0.8	142	4	140	27	3.4	0.8	135
5	AG2157	Kowsalya	40/F	4	150	22	3	0.8	226	4	150	22	3.1	0.8	220
6	AG2470	Rose	40/F	4.1	115	25	2.7	0.8	200	4	120	25	2.7	0.8	190
7	AG2945	Anjali	46/F	2.8	96	38	2.2	0.8	185	4.5	96	38	3.2	0.8	180
8	AG3630	Rajalakshmi	50/F	3.7	115	25	2.6	0.7	190	3.7	115	24	3.6	0.7	186
9	AG3923	Muhammadimran	35/M	2.6	100	15	3.5	0.8	245	2.8	115	15	3.2	0.8	220
10	AG4081	Balakrishnan	42/M	4.2	150	16	2.7	0.9	200	4.2	120	16	2.7	0.9	190
11	AG4403	Pannerselvan	40/M	4.8	120	18	3.6	0.9	185	4.8	125	18	3.6	0.8	180
12	AG4413	Palaniyammal	40/F	2.9	80	23	2.6	0.8	207	3.7	85	23	3.5	0.7	190
13	AG5701	Santhi	42/F	2.7	95	25	3.7	0.8	164	3	90	25	3.6	0.8	160
14	AG5121	Sudha	32/F	2.5	105	25	2.6	0.7	160	3.5	120	25	3.7	0.8	165
15	AG6238	Arumaikan	43/F	3.1	86	19	2.7	0.6	154	3.2	87	19	2.7	0.7	150
16	AG6237	Manjula	29/F	2.9	80	17	3.5	0.8	168	3	80	17	2.7	0.8	160
17	AG6236	Baskaran	49/M	2.7	82	25	4.5	0.9	170	3.5	80	25	4.7	0.9	172
18	AG2945	Jothi	41/F	3.2	102	25	4.5	0.9	184	3.5	105	25	4.5	0.8	184
19	AG2114	Danalakshmi	46/F	4.2	80	24	4.8	0.7	208	4.5	80	24	4.7	0.7	200
20	AG5126	Amaravathi	36/F	4.1	85	33	2.6	0.6	154	4	80	34	2.6	0.6	154
21	782/IP	Govindammal	50/F	3.5	125	35	2.5	0.7	154	3.8	128	35	2.4	0.7	152
22	750/IP	Devi	45/F	4.2	120	30	2.7	0.6	150	4.2	125	35	2.8	0.6	159
23	787/IP	Vijayalakshmi	54/F	4.1	810	14	2.8	0.6	227	4.2	80	15	2.8	0.6	220
24	782/IP	Santhi	52/F	4	80	21	3.2	1.4	154	4.2	85	20	3.1	1.2	150
25	852/IP	Gangadevi	52/F	3.5	190	22	3.5	1.1	221	3.5	120	23	3.5	1.2	215
26	849/IP	Lakshmi	45/F	3.3	150	28	4	1.5	151	3.4	115	29	4.1	1.4	150
27	838/IP	Niraimathi	54/F	4	128	29	4.2	1.6	200	4.2	120	29	4.1	1.6	190
28	858/IP	Amaravathi	60/F	3.3	108	27	4.3	1.2	196	3.3	108	27	4.2	1.2	190
29	1262/IP	Govindasami	40/M	4	128	26	4.8	1.1	245	4	120	26	4.8	1.2	220
30	1181/IP	Janarthanan	55/M	4.1	107	25	3.6	1.2	226	4	100	25	3.6	1	200s

URINE ANALYSIS OF KUTHI KAAL VATHAM PATIENTS

S. No	OP/ IPNO	NAME	A/S	BEFORE TREATMENT						AFTER TREATMENT					
				Alb	Sug	Deposits				Alb	Sug	Deposits			
						Pus cells	Epi cells	RBC's	Casts /crystals			Pus cells	Epi cells	RBC's	Casts /crystals
1	AG781	Tamilselvi	27/F	Nil	Nil	2-3	2-3	Nil	Nil	Nil	Nil	4-6	2-4	Nil	Nil
2	AF8901	Kaveri	42/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-3	2-4	Nil	Nil
3	AG2076	Esther	53/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	5-6	5-6	Nil	Nil
4	AG2142	Vasantha	52/F	Nil	Nil	4-6	4-6	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
5	AG2157	Kowsalya	40/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
6	AG2470	Rose	40/F	Nil	Nil	2-4	2-5	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
7	AG2945	Anjali	46/F	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
8	AG3630	Rajalakshmi	50/F	Nil	Nil	4-6	4-6	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
9	AG3923	Muhammadimran	35/M	Nil	Nil	2-3	2-3	Nil	Nil	Nil	Nil	1-2	2-5	Nil	Nil
10	AG4081	Balakrishnan	42/M	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-3	4-5	Nil	Nil
11	AG4403	Pannerselvan	40/M	Nil	Nil	4-6	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
12	AG4413	Palaniyammal	40/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
13	AG5701	Santhi	42/F	Nil	Nil	2-4	4-	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
14	AG5121	Sudha	32/F	Nil	Nil	3-4	4-6	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
15	AG6238	Arumaikan	43/F	Nil	Nil	1-2	2-6	Nil	Nil	Nil	Nil	1-4	2-4	Nil	Nil
16	AG6237	Manjula	29/F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
17	AG6236	Baskaran	49/M	Nil	Nil	2-4	2-5	Nil	Nil	Nil	Nil	2-3	2-4	Nil	Nil
18	AG2945	Jothi	41/F	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
19	AG2114	Danalakshmi	46/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
20	AG5126	Amaravathi	36/F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	5-6	2-4	Nil	Nil
21	782/IP	Govindammal	50/F	Nil	Nil	4-6	1-2	Nil	Nil	Nil	Nil	2-3	2-4	Nil	Nil
22	750/IP	Devi	45/F	Nil	Nil	2-4	2-3	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil
23	787/IP	Vijayalakshmi	54/F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil
24	782/IP	Santhi	52/F	Nil	Nil	3-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
25	852/IP	Gangadevi	52/F	Nil	Nil	2-6	2-4	Nil	Nil	Nil	Nil	1-2	2-5	Nil	Nil
26	849/IP	Lakshmi	45/F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil
27	838/IP	Niraimathi	54/F	Nil	Nil	2-3	2-5	Nil	Nil	Nil	Nil	1-2	1-3	Nil	Nil
28	858/IP	Amaravathi	60/F	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
29	1262/IP	Govindasami	40/M	Nil	Nil	3-4	1-2	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
30	1181/IP	Janarthanan	55/M	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil

DISCUSSION

The drug Korai Kizhangu Choornam was selected to find its efficacy in the treatment of Kuthi Kaal Vaatham.

Literary evidences strongly support the Anti-Inflammatory and analgesic activity of the drug.

Bio-Chemical analysis of the drug Korai Kizhangu Choornam reveals the presence of Copper, Manganese, Starch, Unsaturated compound and reducing sugar.

Copper is necessary for the formation of the RBC and other components of the blood system and for the healthy growth, development and maintenance of bone, connective tissue, brain, heart and many other body organs. Copper like Zinc and Manganese is used to form Anti-Inflammatory compounds in the body known as SuperOxide Dimutase.

Manganese is essential for normal bone structure reproduction and normal functioning of CNS. Bone deformaties occur in all animals in its deficiency.

Starch is by for most consumed polysaccharides in the human diet. Traditional foods such as Cereals, roots and tubers are main source of dietary starch.

Pharmacological Studies:

Pharmacological studies done in Vel's college of pharmacy in pallavaram.

In acute toxicity study oral administration of Korai Kizhangu choornam did not produce any mortality in mice upto a dose level of 4gm/kg. This may be due to the broad non-toxic range of the drug.

Korai Kizhangu choornam exhibited significant dose dependent antinociceptive effect as measured by hot plate method and chemically induced abdominal constrictions in mice. These observations substantiate the findings of clinically in man.

The Korai Kizhangu choornam showed antiinflammatory activity, which was found to be statistically significant at 400mg/kg concentration in acute formalin induced rat paw oedema model. However, this activity was less potent as compared to Phynylbutazone and Aspirin. This activity appears to be significant in early phases of inflammation in which various biochemicals, viz. histamine, 5-HT, various kinins are involved. The results were significant when analysed statistically. Thus, *Korai Kizhangu Choornam* shows anti-

inflammatory activity at various acute phases of inflammation and on formation of granular tissue.

Results shows that Korai Kizhangu Choornam possess insignificant depleting action of calcium ($P < 0.01$). There is significant kaliuretic and chloriuretic effect was observed in the Korai Kizhangu Chooranam treated animals and their urine sample (Table no.7 and 8). Urine production is more in 400mg / kg of Korai Kizhangu Chooranam at 24^{th} hr was moderately significant compared to control. The calcium, phosphate level in rats, calcium, phosphate level in blood serum and heamatological parameters has been shows to be moderately lowered.

SIDDHA ASPECT

The drug Korai Kizhangu Choornam was mentioned in Gunapadam Mooligai vaguppu for Kuthi Vatham.

அதிசாரம் பித்தம் அனற்றாகம் ஐயங்
குதிவாதஞ் சோபங் கொடிய ___ முதிர்வாந்தி
யாரைத் தொடர்ந்தாலும் அவ்வவர்க்கெ லாங்குளத்துக்
கோரைக் கிழங்கைக் கொடு

So the author has selected this drug for evaluation of Analgesic, anti – inflammatory and calcium depletion activity.

SUMMARY AND CONCLUSION

The drug Korai Kizhangu Choornam has selected for the study to evaluate its efficacy in the management of Kuthi Kaal Vaatham

The literature collection describes the anti-inflammatory, analgesic and calcium depletion activity of the drug Korai Kizhangu Choornam.

The chemical analysis of the drug Korai Kizhangu Choornam reveals the presence of copper, manganese, starch, unsaturated compound and reducing sugar.

Pharmacological studies showed that the drug has significant anti-inflammatory and analgesic activity at the dose of 400 mg/kg and no significant adverse effects.

The pharmacological screening results showed that the drug Korai Kizhangu Choornam does not possess significant calcium depleting effect.

Further it is evident that the drug is not altering the calcium level significantly in animal models. It can be suggested that this drug is useful in the treatment of calcaneal spur by acting other mechanism but not by depleting the calcium level.

30 patients with signs & symptoms of Kuthi Kaal Vaatham were selected and a thorough observation was made.

The majority of the patients were female.

Clinically no adverse effects were reported during the course of treatment.

The improvement shown after treatment in terms of clinical symptoms viz. tenderness, morning stiffness, localised swelling of the foot, warmth, colour change, pain during rest, standing and walking were statistically significant.

Conclusion

From the pharmacological studies and clinical study, it was concluded that the drug Korai Kizhangu choornam has significant anti-inflammatory and analgesic activity .

Thus it gives us a new hope in the management of Kuthi Kaal Vatham (Calcaneal spur).

A STUDY ON PALAGARAI PARPAM

INTRODUCTION

Among the traditional system of medicine, Siddha system of medicine is not only ancient but it has its own enduring properties. In Siddha system, drugs are classified into 3 main groups namely Mooligai, Thathu and Jeevam. The class Jeevam consists of animal products which bear the medicinal values in abundance.

The Siddha system has got great remedies from animal source. The Palagarai comes under the Jeeva vaguppu. In this study the author has undertaken Ven Palagarai for experimentation of its medicinal properties.

As per specification given in the Siddha literature "Gunapadam Thathu Jeeva Vaguppu", the Ven Palagarai is better than all other speicies. So the author has selected Ven Palagarai for this study.

It is an important animal source belonging to "**MOLLUSCA"** Phylum, Zoologically named Cypraea moneta, linn.

The drug has maximum pharmacological and therapeutic effects without any side effects.

Leucorrhoea, a vaginal discharge is a universal problem of all women. Female genitals are very much prone to infections. Since they are moist more sweaty and covered.

The drug Palagarai Parpam is indicated for Vellai Noi in Pathartha Guna Vilakkam (Thathu Jeeva Varkam) so the author has selected this drug to evaluate Anti-microbial activity.

AIM AND OBJECTIVES

AIM:

To evaluate the efficacy of Palagarai parpam in the management of Vellai noi [Leucorrhoea]

OBJECTIVES:

The clinical efficacy of Palagarai parpam has been evaluated in the following aspects.

- Collection of evidences in Siddha aspects
- Collection of evidences in Chemical aspects
- Collection of evidences in Zoological aspects
- Bio-Chemical analysis
- Physical properties
- Toxicological study
- Pharmocological analysis
- Open clinical trial of Palagarai parpam for Vellai Noi given orally

GUNAPADAM ASPECT

பலகறை

வேறுபெயர்கள்:

”மண்ணிய கவடி சோகி வராடியே பலகறைப்பேர்

- நிகண்டு

கடல்படு திரவியம் ஐந்தினுள் ஒன்றாகிய இது கவடி, சோகி, வராடி என்ற வேறுப்பெயர்களால் வழங்கப்படுகின்றது.

சோகி பரல் வட்டி பலகறை வெள்வரி

யாம் கவடி யோடல கென்றான்

- நாம தீப நிகண்டு

என்பதிலிருந்து சோகி, பரல், வட்டி, பலகறை, வெள்வரி, கவடி என்ற வேறுப் பெயர்களால் வழங்ப்படுகின்றது

அளவு:

இதன் உருவம் புளியின் வித்து முதல், வாதுமைக் கொட்டைப் பருமனளவு இருக்கும்.

நிறம்:

வெள்ளை, மஞ்சள், சிவப்பு ஆகிய மூன்று நிறங்களில் இது கிடைக்கும். வெண்ணிறப் பலகறையே சிறந்தது.

சுவை:

இது கைப்புச் சுவையை உடையது.

செய்கை:

இதற்கு தாது வெப்பகற்றி செய்கையும், கோழையகற்றிச் செய்கையும், வெப்பகற்றிச் செய்கையும், வெளிப்பிரயோகத்தில் தடிப்புண்டாக்கிச் செய்கையும் உள.

பொதுக்குணம்:

”மந்தந்தா கங்கிரகணி மாவிடச் சுரங்கண்ணோய்
தொந்தம் பரிநாமச் சூலைகய ___ மிந்த
வுலகறையைக் காலொடிவை யோடு நரைத்த
பலகறையை காணினியம் பார்.”

பொருள்:

வெண் பலகறையினால் அலசம், தாகம், கிரகணி, மகாவிடச் சுரங்கள், விழிநோய், வாத தொந்தம், பலவிதக் குத்தல், கயம், கபவாதம் முதலியன நீங்கும். மேலும் அஜீரணம், காமாலை, கல்லீரல், மண்ணீரல் வீக்கம், சுவாசகாசம், காசம் முதலிய நோய்களும் தீரும்.

சுத்தி முறை:

ஒரு பலம் (35 கிராம்) பலகறைப் பொடிக்கு, பத்து பலம் (350 கிராம்) தமரத்தம் பழச்சாற்றைக் காலையில் விட்டு, மாலைவரை வெய்யிலில் வைத்து எடுத்து மறுநாள் காலையிலும் புதிதாக மேற்படி சாற்றை விட்டு வெயிலில் வைக்கவும். இம்மாதிரி பதினைந்து நாட்கள் செய்தெடுக்கப் பலகறை சுத்தியாகும்.

இவ்விதம் சுத்தி செய்யப்பட்ட பலகறையினால் செய்யப்பட்ட அவிழ்தங்கள், பலவகைப்பட்ட காமாலைகள், தேமல்கள், எரிந்து உட்ணப் பெருக்கத்தை உண்டாக்கும் நேத்திரப் பிணிகள் முதலியவற்றை நீக்கி உடலை உரமாக்கும்.

புறநடை

வாதத்தைச் சேர்ந்த மேக உஷ்ணப் பிணியில், வயிறு ஒரு பக்கம் இழுத்துக் கொள்ளுதல், பசியின்மை, திமிர், பக்கம், வயிற்றடி, கன்னம், கழுத்து இவ்விடங்களில் பரு தோன்றித் துன்பத்தைக் கொடுத்தால் இவற்றிற்குப் பலகறைப் பற்பத்தை மிளகு இரசத்தில் அனுபானித்துக் கொடுக்க வேண்டும்.

பித்தத்தைச் சேர்ந்த மேக உஷ்ணப் (தினவென்கிற) பிணியில் அக்கரம் போலிருத்தல், வாய்நீர் ஊறல், வாந்தி, விக்கல், பெருந்தாகம், வாய், உதடு, முகவாய்க்கட்டை, மார்புப் பள்ளம், விரல் இவ்விடங்களில் புண், பரு கண்டு ஆறாதிருத்தல் இவற்றிற்குப் பலகறைப் பற்பத்தைச் சுக்கு இரசத்தில் அனுபானித்துக் கொடுக்க வேண்டும்.

கபத்தைச் சேர்ந்த மேக உஷ்ணப் (சொறி என்ற) பிணியில் கழுத்தில் துர்நாற்றத்துடன் வியர்வை காணுதல், வயிறு உப்பி மேற் சுவாசம் கண்டு பசி,

தாகமில்லாதிருத்தல், பீனிசம்போல் மூக்கில் இரத்தம் வடிதல், முழங்கால், முதுகு, உச்சி இவ்விடங்களில் பருவும், கட்டியும் கண்டு, தலையில் ஒரு வித சொறி, தேமல் போலத் தோன்றி சொறிந்தால் சாம்பல் பொடியைப் போல் தூள் உதிர்ந்து கொண்டிருத்தல் இவற்றிற்குப் பலகறைப் பற்பத்தைத் திப்பிலி இரசத்தில் அனுபானித்துக் கொடுக்க வேண்டும்.

மேற்படி பிணிகளுக்குப் பத்தியம்- புளி, நல்லெண்ணெய், கடுகு, பெண் போகம் ஆகியவற்றை நீக்க வேண்டும்.

அருந்தும் நாளளவு- இரண்டு பட்சம் அருந்தி, மறுபத்தியம் இரண்டு பட்சமிருக்க வேண்டும்.

இடைப்பகல் சிற்றுண்டி- வாத மேகத்திற்கு, தேங்காய்ப் பாலில் நல்ல வெல்லத்தைச் சேர்த்துக் குழப்பிய பால்.

பித்த மேகத்திற்கு, தேங்காய்ப் பாலுடன் சர்க்கரை, கோதுமை மா சேர்த்துச் செய்யப்பட்ட பட்சணம்.

கப மேகத்திற்கு, தேங்காய்பாலில் அரிசிமா, கற்கண்டு பசுவின்பால் கூட்டிய (களி) தேங்காய்ப் புட்டடையாகச் செய்து உண்ணவேண்டும்.

2. சீவவெறி நஞ்சிற்குப் பலகறைப் பற்ப ஆட்சி:

செயற்கையாகவும், இயற்கையாகவும் வெறிபிடித்த நாய், நரி,மனிதர், பசு, எருமை, பன்றி இவைகளினால் உண்டாம் நஞ்சிற்குப் பலகறைப் பற்பத்தைத் தக்க துணை மருந்துடன் அளித்து, தேகத்தை நிலைக்கச் செய்ய வேண்டுமென்பதை

”நாய்நரிமா னிடர்பசுகா ராணிருளி வெறியிரண்டி
னடையி யற்கை
யாய்செயற்கை வழிகுணத்தி னாலறிந்திட்ட தற்கமைய
வநுகூ லித்தே
நீயுளமா கவடிவெண்மை யனுபானப் படியளித்து
நிலைக்கச் செய்தே
மாய்வுறுதே கத்தை மகி தலத்திருத்தி யாயுண்மறை
வன்மையுள்ளோம் ”.

என்ற மாபுராணச் செய்யுளாலறிக

இவற்றுள் செயற்கை வெறி என்பது உயர்திணையாகிய மாந்தர்க்கு மருந்தினால் வரும் வெறியும், அ/றிணையாகிய நாய், நரி, பசு, எருமை, பன்றி இவைகட்குச் சுடு காட்டிலுள்ள தலையோட்டில் தங்கிய நீரைக் குடித்தலால் உண்டாகும் வெறியுமாகும்.

இயற்கை வெறி என்பது மேலே சொல்லப்பட்ட அ/றிணை உயிர்களுக்குப் பிறவியிலேயே உண்டான வெறியையும்:, உயர்திணை உயிராகிய மாந்தர்க்கு ஊழியினால் உண்டாம் வெறியையும் குறிக்கும்.

இவ்விருவகையுள் செயற்கை வெறி நஞ்சு தீர்வதும் (சாத்தியமும்) இயற்கை வெறி நஞ்சு தீராததும் (அசாத்தியமும்) ஆகும்.

சீவவெறி நஞ்சிற்கு பலகறைப் பற்ப ஆட்சி

	நஞ்சுக் கடிகள்	**அனுபானம்**	**உணவு**
1.	செயற்கை வெறிநாய் நஞ்சு இயற்கை வெறிநாய் நஞ்சு	கல்லாலின் சாறு நிலப்பனை சாறு	கொள்ளுக்கஞ்சி காராமணிப் பருப்பு கஞ்சி
2.	செயற்கை வெறிநரி நஞ்சு இயற்கை வெறிநரி நஞ்சு	கீழாநெல்லிச் சாறு மூங்கில் சாறு	சிறுபயிறுக் கஞ்சி துவரம் பருப்புக் கஞ்சி
3.	செயற்கை வெறிப்பசு நஞ்சு இயற்கை வெறிப்பசு நஞ்சு	நாயுருவிச்சாறு வெற்றிலைச்சாறு	வரகரிசிக் கஞ்சி சாமையரிசிக் கஞ்சி
4.	செயற்கை வெறி எருமை நஞ்சு இயற்கை வெறி எருமை நஞ்சு	வன்னியிலைச்சாறு கோரைச்சாறு	புல்லரிசிக் கஞ்சி தினையரிசிக் கஞ்சி
5.	செயற்கை வெறிப் பன்றி நஞ்சு இயற்கை வெறிப் பன்றி நஞ்சு	பாகலிலைச்சாறு பேய்ப்புடல் சாறு	மூங்கிலரிசிக் கஞ்சி கோதுமையரிசிக் கஞ்சி
6.	செயற்கை வெறி மனிதர் நஞ்சு இயற்கை வெறி மனிதர் நஞ்சு	நரிப்பயிற்றங் கொடி சாறு செருப்படைச்சாறு	அவரைப்பருப்பு கஞ்சி உளுந்து கஞ்சி

3. காயங்களுக்கு பலகறை பற்ப ஆட்சி:

1. முள் தைத்த காயம், மாடு முட்டின காயம், புண் இவைகளுக்குப் பலகறைப் பற்பத்தைப் கிளி முட்டைக் கருவில் இழைத்துத் தடவ வேண்டுமென்றும்,
2. பனை மட்டைக் கருக்கினால் அடிபட்ட புண்ணுக்கு, மேற்படி பற்பத்தை கோழி முட்டைக் கருவில் இழைத்துத் தடவவேண்டுமென்றும்,
3. கத்தி, ஈட்டி, பாங்கு இவைகளினால் உண்டான காயப் புண்ணுக்கு, புறா முட்டைக் கருவில் மேற்படி மருந்தை இழைத்துத் தடவ வேண்டுமென்றும்,

4. கல்லடி காயம், விழுந்த காயம் இவைகளுக்குத் தவளை முட்டைக் கருவில் மேற்கண்ட மருந்தை இழைத்துத் தடவ வேண்டுமென்றும்,
5. கதை, தடி, உலக்கை முதலியவைகளால் உண்டான காயங்களுக்கு காக்கை முட்டைக் கருவில் மேற்கண்ட மருந்தை இழைத்துத் தடவ வேண்டுமென்றும்.
6. கையால் அடிபட்டும், நகத்தால் கிள்ளுப்பட்டும், உண்டான காயங்களுக்கு அன்றிற் பட்சி முட்டைக் கருவில் மேற்கண்ட மருந்தை இழைத்துத் தடவ வேண்டுமென்றும்.
7. வெகு விதத்தில் ஊறுபட்டு ஆறாமலிருக்கிற பழம் புண்காயங்களுக்கு ஆமை முட்டைக் கருவில் மேற்கண்ட மருந்தை இழைத்துத் தடவ வேண்டுமென்றும் கூறப்பட்டுள்ளன.

4. பற்ப மகிமை

இப்பற்பம், உடலிலிருந்து நீங்கிய வன்மையைத் திரும்ப கொடுத்து மகிழ்வை உண்டு பண்ணும் என்பதாம்.

5. குட்டங்குறை நோய்ப் புண்களுக்கு

”தேசிப் பழத்தின் சாறெடுத்துத்
திரும்பக் கலச மதனிலிட்டு
பேசும் பலகறை தானெட்டுப்
பேணிக் கலச மதிலிட்டு
வாச மாக மூடியிட்டே
மறுகால் ரவியில் வைத்ததனைக்
கூச வேண்டா மாறாநாள்
கொதித்து வெந்து நீறாமே”.

வெந்து கொதித்தத் நீறதனில்
மிகுந்த எள்ளி னெய்விட்டுச்
சிந்தை மகிழக் குழைத்தெடுத்துத்
திரும்பப் புண்மேலிடுவீரேல்
வந்த குட்டங் குறைநோயும்
வறிய புண்ணு மாறிவிடும்
சிந்தை மிகவே சிவனாணை
தீரு மென்றார் திருமுனியே”

பலகறை சேரும் மருந்துகள்:

1. **பலகறைப் பற்பம் :**[5]

சுத்தி செய்த பலகறை- பலம் 3 (105 கிராம்),

தூய்மை செய்த ரசம் - செல்லத்தக்க அளவு,

எலுமிச்சம்பழச்சாறு - செல்லத்தக்க அளவு,

இலந்தையிலைச்சாறு - செல்லத்தக்க அளவு

செய்முறை: பலகறையை கல்வத்திலிட்டு பொடித்து இலந்தைச் சாற்றைச் சிறுகச் சிறுகவார்த்து இரண்டு சாமம் (6 மணி) அரைத்து வில்லை செய்துலர்த்தி அகலில் வைத்து மேலகல் மூடி மூன்று சீலை மண் செய்துலர்த்தி நூற்றைம்பது பலம் (5250 கிராம்) வறட்டியிற் புடமிட்டாறின பின்னெடுக்கப் பற்பமாயிருக்கும். இந்தப் பற்பம் 5 ___ பங்கு, தூய்மை செய்த ரசம் 1 பங்கு இவ்விரண்டையுங் கல்வத்திற் சேர்த்தரைத்து எலுமிச்சம் பழச்சாற்றைச் சிறுகச் சிறுக வார்த்து 4- சாமம் (12 மணி) அரைத்து வில்லை செய்துலர்த்தி அகலிலிட்டு மேலகல் மூடி 5 சீலை மண் செய்துலர்த்தி, நூற்றைம்பது பலம் (5250 கிராம்) வரட்டியில் புடமிட்டாறின பின்னெடுக்கப் பற்பமாயிருக்கும், இரசத்தினெடை நிற்காது. ஆனால் அதன் சத்தைக் கொடுத்துவிட்டு ஓடிப் போகும்.

அளவு: 2 முதல் 4 குன்றிமணி எடை

துணைமருந்து : தேன், நெய், வெண்ணெய் முதலியவைகளாகும்

தீரும் நோய்கள்:

சுரம், **பிரமேகம்,** வயிற்றுநோய், விக்கல், இருமல், நிணக்கழிச்சல், மூலம் முதலிய பல நோய்கள் தீரும். இதனைத் தகுந்த துணைமருந்துகளில் **பித்தசம்பந்தமான எல்லா நோய்களுக்கும் உபயோகிக்கலாம்.**

2. சுத்தி செய்த பலகறை ___ 1 பலம்

கஞ்சா இலை - 7 பலம்

பலகறையை கஞ்சா இலையால் கவசம் செய்து, அதன் மேல் 3 சீலைமண் செய்து 1கஜபுடமிட்டு ஆறின பின் எடுக்க பற்பமாகும்.

அளவு : 1-2 குன்றி

துணை மருந்து ___ தேன், நெய், வெண்ணெய்,

தீரும் நோய்கள் : பெருமளவில் பித்த சம்பந்தமான நோய்கள், பித்த சுரம், நாட்பட்ட சுரம், எலும்புருக்கி[5]

3. நடுத்தரமான பலகறை- 8

இதனை ஒரு பீங்கான் பாத்திரத்தில் போட்டு 1 ஆழாக்கு எலுமிச்சம்பழச்சாறு விட்டு 1 நாள் வைக்க பலகறை எல்லாம் கரைந்து போகும். பிறகு திரி போட்டு நீரை வடித்துக் கொள்ளவும். இந்த நீரைக் குடித்து வரவும்.

தீரும் நோய்கள் : பித்த மேகம், மூத்திர கிரிச்சரம், நீரெரிச்சல், நீரடைப்பு, நீர்க்கட்டு தீரும் [5]

4. பலகறையை அகலில் வைத்து மேல் அகல் மூடி கொல்லன் உலையில் வைத்து அகல் சிவக்க ஊதி எடுத்து ஆற வைத்து எடுக்க பலகறை பற்பமாகும். இதனை 1 ஆழாக்கு எலுமிச்சம்பழச்சாற்றில் போட்டு கலக்கி திரிபோட்டு தெளிவிறுத்து உபயோகிக்கலாம்.

தீரும் நோய்கள்: நீரெரிச்சல், நீரடைப்பு, பித்த சம்பந்தமான நோய்கள், மூத்திரக்கிரிச்சரம், **பிரமேகம்.**[5]

5. 1 பலம் சுத்தி செய்த பலகறையை எடுத்து கீழுள்ள பட்டியலில் குறித்த முறைப்படி அரைத்து உலர்த்திப் புடமிடவும். அரைக்கும் ஒவ்வொரு நாளும், குறித்த எடை புதிய சாற்றை உபயோகிக்கவும். வில்லையை உலர்த்த பகலில் சூரிய ஒளியில் வைப்பது போல இரவில் பனியிலும் வைக்கவும்.

சாற்றின் பெயர்	சாற்றின் அளவு பலம்	அரைக்கும் நாள்	வில்லை உலர்த்தும் நாள்	கவசம் உலர்த்தும் நாள்	புடம் வறட்டி
சுரபுன்னை சமூலச்சாறு	4	6	5	1	36
சித்திரமூல சமூலச்சாறு	4	5	4	1	30
கல்லால் சமூலச்சாறு	4	4	3	1	24
காட்டுமல்லிகை சமூலச்சாறு	3	3	2	1	18
நீலோற்பல சமூலச்சாறு	2	2	1	1	12
சந்தனக்குழம்பு தெளிநீர்	1	1	1	1	6

அளவு - கடலை 1/5

தீரும்நோய்கள்:

வெள்ளைச் சர்க்கரையில் கொடுக்க ___ **பித்தநோய்,** அதைச்சார்ந்து வரப்பட்டபல்லை நோய், பெருவயிறு, பீனிசம், விக்கல் போம்.

பலகறை சேரும் பிற மருந்துகள்:

1. இராஜலோக நாதரச பற்பம்[10]
2. துத்த செந்தூரம்[10]
3. விஷ்னு சக்கர மாத்திரை[13]

எலுமிச்சை

வேறுபெயர்கள்:[17]

சம்பீரம், தேசியபழம், இராசகனீ, அமிர்தபலை என்பன.

சுவை:

புளிப்பு

தன்மை:

வெப்பம்

பிரிவு:

கார்ப்பு

செய்கை:

குளிர்ச்சியுண்டாக்கி

பொதுகுணம்:

தீதெலு மிச்சங்காய் டேர்முத்தோ டத்தையுமுள்
வாதகப சூலையையும் மாகொடிய ___ சாதியெனுஞ்
சத்திகுன் மத்தையுமுள் தங்கமருந் திட்டத்தையும்
பித்தவெடிப்பை யுந்தணிக்கும் பேசு

(அகத்தியர் குணவாகடம்)

எலுமிச்சங்காய் முக்குற்றம், சூலை, வாந்தி, குன்மம், இடுமருந்து, அழல் இவைகளைப் போக்கும்.

மேலும் மந்திரி எனக்கூறும் தீக்குற்றத்தைத் தணிக்கும், தந்திரியாகிய ஐயத்திற்கு அன்பன்போலிருந்து அனலை வளர்க்கும், இதனை

மந்திரிக்கு மந்திரியாய் மன்னனுக்கு மன்னனெனத்
தந்திரிக்கு மித்திரன்போற் சாருமே —— முந்தவரு
கம்பீரு மாய்ச் சரக்கின் கெண்ணியமாய் வாகடர்க்குச்
சம்பீர மாமெலுமிச் சை

(தேரன் காப்பியம்)

என்னும் செய்யுளால் அறியலாம்

சுரத்தில் உண்டாகும் வாந்திகட்கும், வாய்குமட்டலுக்கும் இப்பழரசத்தால் செய்யப்படும் சாதிசம்பீரக்குழம்பு நற்பயன் தரும். மேலும் பித்த நோய்களுக்கு பயன்படும் அனேக மருந்துகளில் இதன் சாறு சேர்க்கப்படுகிறது.

எலுமிச்சம் பழம் கற்ப மருந்துகளில் ஒன்று. இதனை ரசமும் ஊறுகாயுமாக கற்பமுறையாகப் பத்தியத்துடனே 6 மாதம் உட்கொள்ள நரை, திரை மாறும். பிடிப்பு, பெருவயிறு, பக்க சூலை, முடம், வெறி, மயக்கம், மனச்சோர்வு என்பவைகளும் அடியோடு நீங்கும். இதனை

கோணத் துளையுங் குறியுளையுங் கொக்காகிப்
கோணத் துளையுங் குருளைபோற் - கோணச்
சடமதியுண் மாறாமற் சம்பீரக் கற்பஞ்
சடமதியுண் மாறாமற் சண்.

(தேரன் யமக வெண்பா)

என்னும் செய்யுளால் அறியலாம்.

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ZOOLOGICAL ASPECTS

CYPRAEA MONETA, Linn

CLASSIFICATION:

Kingdom	:	Animalia
Phylum	:	Mollusca
Class	:	Gastropoda
Order	:	Sorbeoconcha
Family	:	Cypraeidae
Genus	:	Cypraea
Species	:	moneta

VERNACULAR NAMES:[25]

Tamil	:	Chozhi, Palagarai
English	:	Porceleneous Shells, Cowry
Sanskrit	:	Varatika, Varataka
Arabic	:	Sadaf
Hindi	:	Cowrie, Kowdi
Malayalam	:	Kavati
Kannada	:	Kavadi
Bengali	:	Beya
Gujarathi	:	Codi

HABITAT:[25]

The cowry lives in inter tidal rocky areas. It can be found on and under rocks in shallow water and on exposed reefs at low tide. It feeds an algae and marine vegetation growing on loose rocks and pieces of dead coral.

SHELL DESCRIPTION:

Small, Convolute, Glossy shells of variegated colours of oblong oval shape varying in size from a tamarind seed to an almond.

The upper face is smooth shining and convex. Base is compressed with a cleft in the center which runs longitudinally. The margin of the cleft is serrated on one side and depressed on the other.

The fresh shells consist of a cellular gelatinous tissue filled with Calcareous matter (earthy salts). They are insoluble in water, soluble in hydrochloric acid with effervescence.

They contain phosphate, fluoride and carbonate of calcium;> magnesium;> phosphate;> manganese and sodium chloride.

DISTRIBUTION:

The entire tropical Indian and Pacific oceans from East Africa to Central America including Northern Australia.

COMPARISION:

Cypraea moneta occasionally has an orange ring on the dorsum similar to Cypraea annulus. But it is distinguished by its heavy margin. Juvenile specimens of the 2 species are difficult to separate.

REMARKS:

This is the well known money cowry which was used for currency in some parts of Africa, Asia and Oceania. It is an extremely common shell in its tropical range.

Last century vast quantities were collected on the east coast of Africa and shipped to West Africa, where the shell does not occur naturally. In the year 1867 alone, 67,000 hundred weight passed through the port of Lagos., to be used as payment for oil seed, Under this pressure rapidly devalued as a currency in the latter part of Nineteenth century.

MEDICINAL USES:[25]

Cowri Bhasma is pungently bitter also alterative and expectorant. It is recommended in Dyspepsia, Jaundice, Enlarged Spleen & Liver, Asthma and cough.

The ash is given internally in scalding and gonorrhoea. It is externally used as a caustic as various forms of ointments.

Shula Gaja Kesari is a compound pill made of purified shell, mercury borax, rock-salt, asofoetida and Caruli seeds all in equal parts mixed and reduced to a pill mass with the aid of the juice of betel leaves. Dose is 3-5 grains useful in Colic and pains of intestine.

BOTANICAL ASPECT

Citrus limon (linn) Burm.F

CLASSIFICATION:

Class	:	Dicotyledons
Subclass	:	Polypetalae
Series	:	Disciflorae
Family	:	Rutaceae
Genus	:	Citrus
Species	:	limon

VERNACULAR NAMES:[19]

Tamil	:	Elumichai
Sanskrit	:	Jambira, Nimbu Phala
English	:	Lemon
Telugu	:	Nimma
Unani	:	Leemu, Baraa neebu

HABITAT:[20]

Tropical parts of India, commonly found in Kumaon, northern and central India.

HABIT:[20]

A lemon tree can grow up to 10 metres, but they are usually smaller. The branches are thorny and form an open crown. The leaves are green shiny and elliptical. Flowers are white on outside with a violet streaked interior and have a strong fragrance.

The citrus fruit is a special kind of berry called Hesperidium. Hesperidium is almost unique to the genus of citrus, oblong or globose in shape but of various sizes.

The Hesperidium has a thick oil-gland dotted rind, green when unripe turning yellow as the fruit ripens, a thin, papery white albido on the inside of the rind and a many chambered endocarp with a few seeds in each chamber. From the inner walls of each chamber, grow transverse juice-called hairs, which constitute the edible part of the fruit.

CHEMICAL CONSTITUENTS:[19]

Limonene is a principal constituent of essential oil. Others are Citronellal, n-nonamel, n-decanal, n-dodecanol, linalyl-acetate, geranyl acetate, citronellyl acetate, methyl anthrailate and lipophilic flavanoids including sinesetin and furocoumarins.

The chief flavanoids are bitter neohesperidine naringin and neohesperidin, dihydro chalcones, hesperidine and rutin.

It also contains glycosyl apigenin, B-caryophyllene, limocitrol, limocitrin, abscisic acid, gibberellic acid, abscisinII, auxin and isorhamnetin.

Fresh lemon juice contains minerals such as Zinc, Selenium, Manganese, Magnesium, Molybdenum, Iron, Copper, Phosporus, Sodium, Potassium Fluoride, Iodine, Chromium, Chloride and Calcium. It also contains vitamin A, pantothenic acid, Thiamin, niacin, riboflavin, vitamin B6, vitamin B12, biotin, vitamin C, E and K.

MATERIALS AND METHODS

COLLECTION OF THE TEST DRUG

Palagarai was collected from the indigenous raw drug stores Thambaram.

gyfiw Rj;jp

பலகறையை ஒரு பாத்திரத்தில் போட்டு அதன் மீது எலுமிச்சம்பழச் சாற்றை விட வேண்டும். இச்சாறானது பலகறைக்கு மேல் 1 அங்குலம் இருந்தால் போதுமானது அதாவது 1 அங்குலம் உள்ளே ஆழ்ந்திருக்க வேண்டியது. வெயிலில் வைத்து சாறெல்லாம் சுண்டின பின்பு தண்ணீர் விட்டு சுத்தமாக கழுவி எடுத்து வெயிலில் உலர்த்தி வைத்துக் கொள்வதே சுத்தியாகும்.

PREPARATION OF THE DRUG:

105 grms of palagari was put in a mud vessel and soaked with lime juice and sun – dried for 2 hours and covered using a mud cap (Agal). Then the mud cap and the vessel was covered using 7 layers of clay pasted clothes (seelai). Once dried it was calcined by using 30–40 cow dung cakes. After heat gets settled, the mud vessel was un covered and calcined oxide was noticed. The calcined oxide was then replaced into a different vessel, powdered well with the help of stone mortar and preserved in a air tight vessel.

INTENDED THERAPEUTIC DOSE & DURATION

130 mg , b.d. with butter after food for 24 days

BIO CHEMICAL ANALYSIS

CHEMICAL ANALYSIS OF PALAGARI PARPAM

SI.NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of the sample	Dark green colour	
2.	**Solubility:** a. A little of the sample is shaken well with distilled water b. A little of the sample is shaken well with con Hcl/ con H_2S_{O4}	Sparingly soluble Completely soluble	 Absence of silicate
3.	**Action Of Heat:** A small amount of the sample is taken in a dry test tube and heated gently at first and then strongly	White fumes gas evolved No brown fumes	Presence of carbonate' Absence of Nitrate
4.	**Flame Test:** A small amount of the sample is made in to a paste with con. Hcl in a watch glass and introduced into nonluminous part of the Bunsen flame	Bluish green colour flame is not appeared	Absence of Copper
5.	**Ash Test**: A filter paper is soaked into a mixture of sample and add cobalt nitrate solution and introduced into the Bunsen flame and ignited	Yellow colour flame not appeared	Absence of sodium

PREPARATION OF EXTRACT

5 gm of Palagarai parpam is weighed accurately and placed in a 250 ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

SL NO.	EXPERIMENT	OBSERVATION	INFERENCE
I	**Test For Acid Radicals**		
1.	**Test For Sulphate**: a. 2 ml of the above prepared extract is taken in a test tube, to this, add 2ml of 4% ammonium oxalate solution	No Cloudy appearance present	Absence of solphate.
	b. 2ml of the above prepared extract is added with 20ml of dil, Hcl is added until the effervescence ceases off. Then 2ml of Barium chloride solution is added.	No white precipitate insoluble is con, HCL	Absence of sulphate
2.	**Test For Chloride**: 2ml of the above prepared extract is added with dil. HNO3 till the effervescence ceases. Then 2ml of silver nitrate solution is added	Cloudy appearance	Presence of Chloride
3.	**Test For Phosphate**: 2ml of the extract is treated with 2ml of ammonium molybdate solution and 2ml of con.HNO3	No cloudy yellow appearance	Absence of Phosphate
4.	**Test For Carbonate:** 2ml of the extract is treated with 2ml of magnesium sulphate solution	Cloudy appearance	Presence of carbonate
5.	**Test For Nitrate:** 1gm of the substance is heated with copper turning and concentrated H_2SO_4 and viewed the test tube vertically down	No characteristic changes	Absence of Nitrate
6.	**Test For Sulphide**: 1gm of the substance is treated with 2ml of con. Hcl	Colourless, no rotten egg smelling gas	Absence of sulphide
7.	**Test For Fluoride & Oxalate**: 2ml of extract is added with 2ml of dil acetic acid and 2ml of calcium chloride solution and heated	No cloudy appearance	Absence of fluoride and oxalate
8.	**Test For Nitrite**: 3 drops of the extract is placed on a filter paper, on that 2drops of acetic acid and 2 drops of benzidine solution is placed.	No reaction	Absence of Nitrite
9.	**Test For Borate**:		

	2 Pinches of the substance is made into paste by using sulphuric acid and alcohol (95%) and introduced into the blue flame	No Bluish green colour flame appeared	Absence of Borate
II	**Test For Basic Radicals**		
1.	**Test For Lead** 2ml of the extract is added with 2ml of potassium iodide solution	No yellow precipitate	Absence of lead
2.	**Test For Copper:** a. One pinch of substance is made in b. to paste with con. Hcl in a watch glass and introduced into the non-luminous part of the Bunsen flame. c. 2 ml of extract is added with excess of ammonia solution	No blue flame No blue precipitate	Absence of copper Absence of copper
3.	**Test For Aluminium :** To the 2ml of the extract sodium hydroxide is added in drops to excess	No characteristic changes	Absence of aluminium
4.	**Test For Iron:** a. To the 2ml of extract add 2ml of ammonium thiocyanate solution. b. To the 2ml extract add 2ml ammonium thiocynate solution and 2ml of con HNO3 is added	Blood red colour is not appeared No red colour developed	Absence of Iron Absence of Iron
5.	**Test For Zinc:** To 2ml of the extract sodium hydroxide solution is added in drops to excess	White precipitate obtained	Presence of Zinc
6.	**Test For Calcium:** 2ml of the extract is added with 2ml of 4% ammonium oxalate solution	Cloudy appearance, white precipitate is obtained	Presence of calcium
7.	**Test For Magnesium**: To 2ml of extract sodium hydroxide solution is added in drops to excess	White precipitate is obtained	Presence of magnesium
8.	**Test For Ammonium:** To 2ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution are added	Mild reddish brown colour is not appeared	Absence of ammonium
9.	**Test For Potassium**: A pinch of substance is treated with 2ml of sodium nitrate solution and then treated with 2ml if cobalt nitrate in 30% glacial acetic acid	Yellowish precipitate is not obtained	Absence of Potassium

10.	**Test For Sodium**: 2 Pinches of the substance is made into paste by using Hcl and introduced in to the blue flame, of Bunsen burner	Yellow colour flame not appeared	Absence of Sodium
11.	**Test For Mercury:** 2ml of the extract is treated with 2ml of sodium hydroxide solution	No yellow precipitate is obtained	Absence of Mercury
12.	**Test For Arsenic:** 2ml of extract is treated with 2ml of silver nitrate solution	No brownish red precipitate is obtained	Absence of Arsenic
III	**Miscellaneous:**		
1.	**Test For Starch:** 2ml of extract is treated with weak iodine solution	No blue colour developed	Absence of Starch
2.	**Test For Reducing Sugar**: 5ml of Benedicts qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted	No colour Changes	Absence of Reducing sugar
3.	**Test For The Alkaloids:** a. 2ml of the extract is treated with 2ml of potassium iodide solution. b. 2ml of extract is treated with 2ml of picric acid. c. 2ml of the extract is treated with 2ml of phosphotungstic acid	No red colour develops No yellow colour develops No white precipitate obtained	Absence of alkaloid Absence of alkaloid Absence of alkaloid
4.	**Test For Tannic Acid:** 2ml of extract is treated with 2ml of ferric chloride solution	No Black precipitate is obtained	Absence of Tannic acid
5.	**Test For Unsaturated Compound**: To the 2ml of extract 2ml of potassium permanganate solution is added	Potassium permanganate is not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid**: 2drops of the extract is placed on filter paper and dried well	No Violet colour obtained	Absence of amino acid

7.	**Test For Albumin:** 2ml of the extract is added with 2ml of ESBOCH'S reagent	No yellow colour precipitate is formed	Absence of albumin
8.	**Test For Type of Compound:** 2ml of the extract is treated with 2ml of ferric chloride solution	i No green colour developed ii No red colour developed iii No Violet colour developed iv No blue colour developed v No Black colour developed	i) Absence of oxyquinole epinephrine and pyrocatechol ii)Anti prine Aliphtic amino acids and mecinic acid are absent iii)Apo morphine salicylate and resorcinol are absent iv) Morphine, Phenol, cresol and hydro-quinone and absent. v)Absence of Tannin

PHYSICAL PROPERTIES

Loss on Drying

5gms of material is heated in a hot oven at 105˚C to constant weight. The percentage of loss of weight was calculated.

Determination of ash Value

Weight accurately 2-3gms of sample in tarred platinum or silica dish and incinerate at a temperature not exceeding 450˚C until free from carbon, cool and weigh. Calculate the percentage of ash with reference to the air dried drug.

Acid Insoluble ash

Boil the ash for 5 minutes with 25ml of 1:1 dilute HCl. Collected the insoluble matter in Gooch- crucible on an ash less filter paper, wash with hot water and ignite, cool in a dessicator and weight. Calculate the percentage of acid insoluble ash with reference to the air dried drug.

Water Soluble ash

To the Gooch crucible containing the total ash, and 25ml of water and boil for 5 minutes. Collect the insoluble matter in a sintered glass crucible or on ash less filter paper. Wash with hot water and ignite in a crucible for 15 minutes at a temperature not exceeding 450˚C. Subtract the weight of the insoluble matter from the weight of the ash; the difference of weight represents the water soluble ash. Calculate the percentage of water soluble ash reference to the air dried drug.

Alkalinity of water soluble ash

5gms converted to ash, boiled with water, filtered, Filtrate was titrated against 0.1N of HCl using phenolphthalein as an indicator.

Alkalinity of water soluble ash=X x of acid / 0.1 x W.

X= Titre value

W= Weight of the materials taken

Alkalinity is given as ml of 0.1 N of HCL equal to 1gm

pH

5gms of Palagarai Parpam is weighed accurately and placed in clear 100ml beaker. A few drops of Aquaregia was added and evaporated by heating for few minutes. After cooling the content, 50ml of distilled water is added to it and dissolved well. Wait for 30 minutes and then apply into PH matter at standard buffer solution at 4.0, 7.0 and 9.2.

PHARMACOLOGICAL STUDY

ACUTE TOXICITY STUDIES

Honey was used as vehicle. Starting dose was 5mg/kg, and the subsequent doses used were 10, 50, 100, 250, 500, 1000 2000 and 4000mg/kg p.o. *Palagarai Parpam* suspended in honey was administered to the groups of wistar rats in a single oral dose by gavage using a feeding needle. The control group received an equal volume of the honey vehicle. Six females and males were used for each dosage level. The principles of laboratory animal care were followed and the Department's ethical comittee approved the use of the animals and the study design. Observations were made and recorded systematically 1, 2, 4 and 24 h after substance administration. The visual observations included skin changes, mobility, and aggressiveness, sensitivity to sound and pain, as well as respiratory movements. They were deprived of food, but not water 16–18 h prior to the administration of the test suspension. Finally, the number of survivors was noted after 24 h and these animals were then maintained for a further 13 days and observations made daily. The toxicological effect was assessed on the basis of mortality, which was expressed as LD_{50}.

ANTIMICROBIAL ACTIVITY OF PALAGARAI PARPAM

Aim:

The present study was designed to assess the antimicrobial property of Palagarai Parpam.

MATERIALS AND METHODS

Test organisms

The following microorganisms were used for the study. In the present study, the antimicrobial activity of the Palagarai Parpam against *Escherichia col*i, *Klebsiella specie*s, *Proteaus vulgari*s, Trichomonas, *Candida albicans* and *Staphylococcus aureus* was carried out. These micro-organisms were obtained from the laboratory stock of the Department of

Pharmaceutical biotechnology, Vel's college, Pallavaram. They were maintained on agar slants at 4^{o}C in the refrigerator.

Drugs and Microbiological Media

Palagarai Parpam (1mg/ml) stock solution was used. Nutrient broth and nutrient Agar and Sabouraud Dextrose Agar.

Preparation of plates for susceptibility tests

The agar-well diffusion method, suitably modified was adopted for the susceptibility studies. Inocula of the test organisms obtained were prepared by growing each pure isolate in nutrient broth overnight 37^{o}C. The overnight broth culture was, subcultured in fresh nutrient broth and grown for 3 hours, to obtain log phase culture. This was matched with MacFarland's turbidity standard to give approximately 10^{8}cfu/ml. Aliquots of 0.1, 0.2, 0.3ml was used to seed a molten nutrient agar medium, which was cooled to 45^{o}C to obtain approximately 10^{6}cfu/ml. This was poured into the sterile petridishes and used for the investigations. *Candidia albicans* was grown on sabouraud 4 % glucose agar and suspension in 1/4 strength Ringers solution was used to prepare the seeded Sabourand 4 % Dextrose agar plates.

The *Palagarai Parpam* stock solution was reconstituted with sterile distilled water and stock concentration of 1mg/ml or 100mg/ml was made. The *Palagarai Parpam* was tested at a concentration of 25mg/ml. 10, 20, 30µl of this concentration was delivered into wells (4mm in diameter) bored into the already seeded nutrient agar plates. One hundred microlitres of cell suspension from the standard inoculum were plated and 6 mm wells were drilled into the agar. 10-30 microlitres of test drug prepared using DMSO/H_2O (25 % v/v) were dropped into the wells. The DMSO/H_2O solution served as the negative control. The plates were incubated under microaerophilic conditions at 37 °C for 72 hours. Test drug that showed a diameter of inhibition 8 mm were considered to be active. The active drugs were further diluted serially using sterile DMSO/H_2O (25 % v/v) to obtain 3 serially two-fold decreasing concentrations which were re-tested in triplicate and the results expressed as a mean diameter of inhibition zone.

வெள்ளை (வெட்டை, பிரமேகம்)

வேறுபெயர்:

வெட்டை நோய், பிரமியம்

இயல்பு:

சிறுநீர் இறங்குவதற்கு முன்போ அல்லது பின்போ வெண்ணிறத்துடன் சீழ்போல் இழிவதும், நீர்ப்புழையில் எரிச்சலையும் கடுப்பையும் உண்டாக்குதலாம்.

முற்குறிகள்:

இந்நோயுற்றவரிடம் கலவி செய்த சில (இரண்டு மூன்று) நாட்கள் சென்றபின், குறியில் நமை, நீர்ப்புழையில் எரிச்சல் ஆகிய குறிகளைக் காட்டி, நீரிறங்கும்போது சீழ் கலந்தாற் போலிறங்கி, நூல் தொங்குவது போலும் வெண்டைக்காய் கழுவிய நீர்போலும் வெளியாகும்.

நோய்வரும்வழி:

அளவு கடந்த கலவியாலும், இந்நோயுற்றோரிடம் கூடுவதாலும் உண்டாகும். மேலும், யோகத்தில் நிலைத்து மூலக்கனலை எழும்பும் போதும் இந்நோய் பிறக்கும் என்பர் சிலர்.

நோய் எண்:

”உரைத்திட்டேன் பிரமியென்ற நோயைத் தானே
உத்தமனே இருபத் தொன்றாங் கண்டாயே.”

வெள்ளை 21 வகைப்படும், அவை

வளி, அழல், ஐய, வளிஅழல், அழலைய, முக்குற்ற, கட்டி, நீர், தந்தி, குருதி, சீழ், ஒழுக்கு, மஞ்சள், கிரிச்சரம், கரப்பான், கல், நூல், நீச்சு, மலினம், இனிப்பு, புண் வெள்ளை ஆகியவை ஆகும்.

பொதுக்குறிகுணங்கள்:

வெப்ப பொருளை யுட்கொள்ளுவதாலும் யோக நிலையிருத்தலாலும் கீழ்க் கனலெழும்பி, அழல் குற்றத்தைக் கெடுத்து நீர்ப்புழை, நீர்ப்பை இவைகளில் தாபிதத்தை உண்டு பண்ணிப் புண்படுத்தி அதினின்று வெள்ளை யிழியச் செய்யும்.

நாள் செல்லச் செல்ல சீழ் கடினப்படுவதுடன் அதிக அளவில் மஞ்சள் நிறத்துடன் வெளியாகும். அன்றியும், இடுப்பு, முதுகு, துடை முதலியன நோகும். சிலவேளைகளில் சுரமுங்காணும். வெப்பமிகுதியால் மலம் வெளிப்படுதலைத் தடுக்கும் பசியுமிராது. மிகுந்த வெப்பத்தினளவாய் நீர்ப்புழை நெருப்புப்போல் எரிந்து, புண்பட்டுக் குருதி மிகுதியாய் இழியும். அப்போது நீரிறங்க முடியாது உயிர் போகின்றது போல வலிக்கும். இதனைத் தாங்க முடியாத சிலர் மிக வருந்துவர்.

குற்ற முதலிய வேறுபாடுகள்:

உணவு, செயல் ஆகியவற்றால், அழல் குற்றம் தன்னளவில் மிகுந்து, கீழ்நோக்குக்காலைக் கேடடையச் செய்து, தனக்குத் துணையாய்ப் பரவுகாலையும் கெடுத்து, சிறுநீர்த்துளையிலும் எருவாயிலும் கனலை மூட்டி, குருதியைக் கேடடையச் செய்யும். இதனால் பசித்தீயின் வன்மை இழந்து, உடல் வன்மையும் குறைந்து மனமுஞ் சோர்வடையும்.

MODERN ASPECT

LEUCORRHOEA

Leucorrhoea, vaginal discharge is a universal problem of all women. No body escapes from this illness. Female genitals are very much prone to infections since they are moist, more sweaty and covered. The white vaginal discharge with foul smell makes it embarrassing to get into social gatherings and even engage in personal affairs. The affected women need reassurance, prevention of infection and some counseling as they usually have abnormal psychosomatic scores. Most secretions are regarding life style physiological and warrant no medical interventions. But it is significant if it is blood stained, profuse, foul smelling or with changes in its colour. Usually the normal secretions are slimy and slightly sticky. It is something like nasal secretion. Normally the quantity of vaginal secretions varies throughout the menstrual cycle, peaking at ovulation and also increasing when under emotional stress.

CLSSIFICATION:

Leucorrhoea is mainly classified into two types:

Physiological leucorrhoea:

It is an excessive discharge or secretions of a normal vagina. They are slimy in nature and generally occur among teenaged girls due to hormonal imbalance during puberty, at the time of ovulation period of the menstrual cycle, before periods, etc. In case of adults, in addition to the ovulation time and before periods, it occurs also during early days of pregnancy and during sexual excitement. Generally, no medication is required in this kind of discharge.

Pathological leucorrhoea:

It is a discharge occurring due to disease or malfunction of the female reproductive tract. It needs immediate attention, cleanliness and treatment. Ignoring pathological leucorrhoea may lead to serious problems like loss of fertility or even removal of uterus. The nature of discharge varies from slimy to thick bloody discharge with foul smell. This condition is commonly present both in case of vaginitis or cervicitis.

Causes of Leucorrhoea:

1.Infections:

From Fungus:

Candida albicans can easily flourish in moist circumstances and is commonly promoted by synthetic undergarments and poor hygienic condition.

From Parasites:

Protozoa – Trichomonas vaginalis causes the Trichomoniasis which spreads usually through sexual intercourse and moist clothes.

From Bacteria:

Gardnerella vaginalis and chlamydia are the prime causes in bacterial infections. Also, it is frequently seen in venereal disease like gonorrhoea, syphilis and AIDS.

2.Injury:

Injury to the vagina or cervix or wound during childbirth, abortion, or excessive sexual indulgence can cause erosions and infections with discharges.

3.Poor hygienic conditions:

Non hygienic measures, especially during periods, can create infection and cause leucorrhoea.

4.Diabetes and anaemia:

May provoke infections due to weakened immunity among many females.

5.Local infection:

Spread of infection from adjacent urinary tract (UTI) or alimentary tract (worms)

6.Irritation of IUCD:

If irritation persists at IUCD, (Intra uterine contraceptive device) it can cause pain and discharges.

7.Sprays and jellies:

Which are used by males for provoking sexual act and jellies and drugs taken by females to kill sperms to avoid conception can also irritate and initiate the infective process.

Symptoms of leucorrhoea:

Mostly there won't be any symptom other than discharge. Discharge may be slimy, viscid to dark coloured or even bloody with a foul smell. In some cases, the accompanying symptoms are:

- ❖ Lower abdominal pain
- ❖ Painful sexual act
- ❖ Backache and pain in the leg, especially thigh and calf muscles
- ❖ Intense itching with oedema of vagina
- ❖ Soreness and burning in the genital tract
- ❖ Burning urination and frequent urge to pass very little urine
- ❖ Irritability and lack of concentration in work due to consciousness of discharges
- ❖ Digestive disturbances like diarrhoea or vomiting
- ❖ General tiredness due to loss of vital fluids as discharges
- ❖ Soreness and dryness
- ❖ Strong smelling or frothy discharge
- ❖ Dark coloured discharge
- ❖ Rashes or sore spots in the genitals.

TRICHOMONIASIS

i) One of the most commonly occurring.

ii) Itching in Vulva

iii) Disease almost entirely in child bearing era.

iv) By inadequate hygiene and by sexually transmissible.

v) By use of an infected persons towels or clothes.

CAUSATIVE ORGANISM: Trichomonas vaginalis, a Protozoan

SYMPTOMS:

i) Vaginal discharge in profuse thin creamy or slightly green.

ii) Irritant and frothy.

iii) Pruritis and inflammation of the vulvae.

iv) Dysuria, frequency of urination and low-grade urethritis.

v) Low back or abdominal pain.

PREVENTION is always better than cure.

i. Wash genitals everyday.

ii. Wear clean underwear everyday.

iii. Always wash genitals from front to back.

Strictly avoid:

1.Sprays, deodorants, and strong perfumed soap and bath products.

2.Stress and strain since it may affect the hormonal level and may increase secretions.

3.Sharing towels and underwear.

4.Synthetic or nylon underwear which cause dampness of genital organs. Always wear cotton underwear to avoid moisture.

5.Sexual intercourse during heavy discharges.

6.Sexual intercourse without condoms while under treatment.

7.Do not stop treatment when symptoms disappear –the full course of treatment is very important. Abstain from sexual intercourse during treatment in order to avoid irritation of tissues, which are in the process of healing.

Always Take

1.Nutritious diet, to improve general health.

2.Plenty of water and juices to avoid urinary tract infection and its spread to the vagina or cervix.

CLINICAL STUDY

Selection of patients:

For this dissertation study, 30 patients were treated in National Institute of Siddha, out patient department with the trial drug.

Selection criteria

Inclution criteria:

1. Age group 15-45 yrs
2. Willing to attend the OPD once in 6 days for 4 weeks

Exclusion criteria:

1. Other vaginal infections
2. Blood stained discharge
3. Malignancy
4. Pregnancy
5. Diabetis

Withdrawl criteria:

1. Severe abdominal pain
2. Any other acute illness

Line of treatment

The drug Palagarai Parpam was administred internallyin dose of 130mg, 2 times a day with butter after food.

Diet restriction

Patients were advised to avoid:

1. Sesban
2. Tamarind
3. Bringal
4. Bitter guard
5. Spicy foods

And were advised to take coolant foods

RESULTS AND OBSERVATION

Results of Bio-chemical analysis of Palagarai Parpam:

Table 12. Standardisation parameters

SL. NO	Parameter	Results
1.	Loss of drying @ 105 º C (%)	0.85
2.	Ash value @ 550 º C (%)	88.10
3.	Water Soluble , (%)	2.13
4.	Alkalinity as $CaCO_3$ in water soluble Ash, (%)	1.40
5.	Acid Insoluble Ash , (%)	0.34
6.	p H at 10% aqueous solution	9.54

Table 13. Qualitative Analysis

SL. No	Parameters	Results
1	Calcium	Present
2	Chloride	Present
3	Carbonate	Present
4	Zinc	Present
5	Magnesium	Present

RESULTS OF PHARMACOLOGICAL STUDIES

ACUTE TOXICITY-RESULTS OF PALAGARAI PARPAM

No death was recorded during the treatment period in treated groups given upto the maximum of 4g/kg of *Palagarai Parpam* orally. The animals did not show any major changes in general behavior or other physiological activities. There were no significant differences in treated groups in the toxic symptoms. But the symptoms like continuous grooming, not responding to stimuli, moderate analgesia in all the group was generally observed in the animals (Table-14). No pathological alterations were grossly detected in vital organs after sacrificing. The organs of both control and treated groups were unremarkable and comparable to each sex. No further evidence of histopathological changes was seen.

Table-14. Incremental dose finding experiment and its Signs of Toxicity

No	Treatment	Dose mg/kg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	I	5	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	II	10	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	III	50	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	IV	100	+	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
5	V	250	+	-	-	+	+	+	-	+	-	-	+	+	-	-	-	-	-	-	-	-
6	VI	500	+	-	-	+	-	+	-	+	-	-	+	+	-	+	-	-	-	-	-	-
7	VII	1000	+	-	-	+	-	+	-	+	-	--	+	+	-	+	-	-	-	-	-	-
8	VIII	2000	+	-	-	+	-	+	-	-	-	-	+	+	+	+	-	-	-	-	-	-
9	IX	4000	+	+	+	+	+	+	+	+	-	-	+	+	+	+	-	-	-	-	-	-

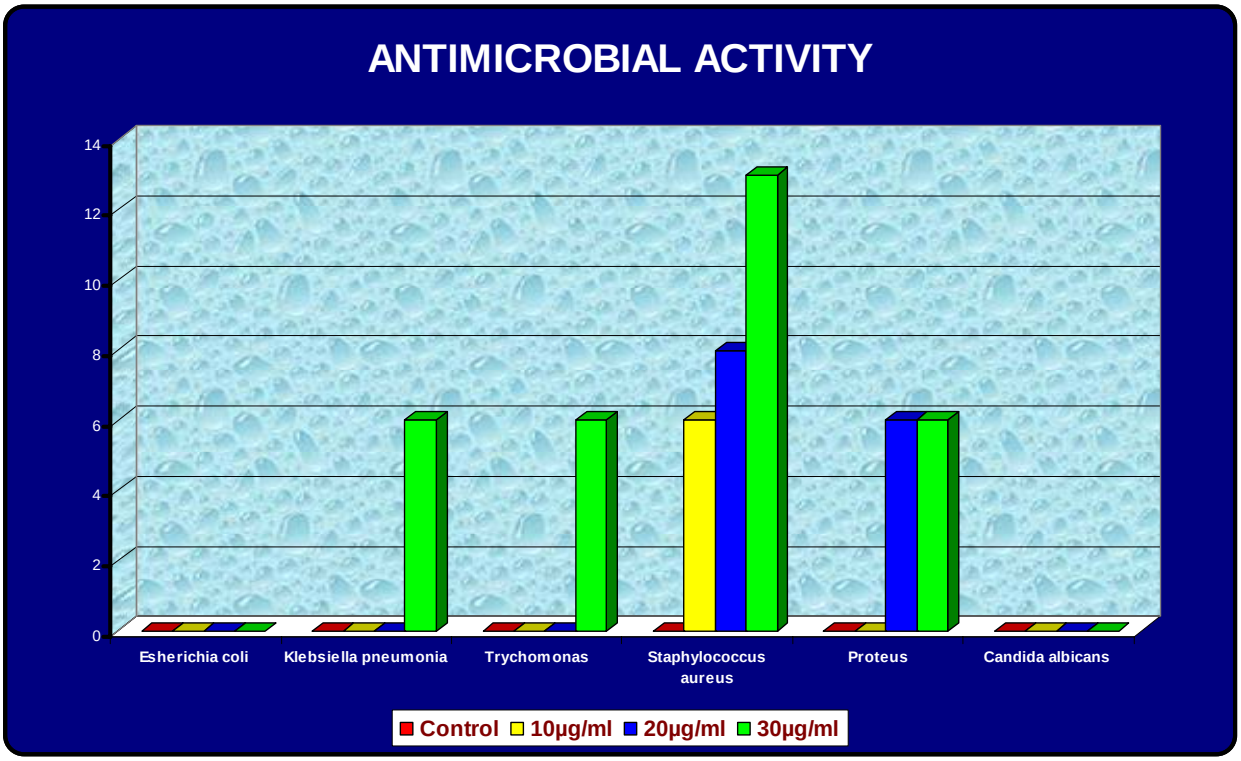
1. Alertness 2. Aggressiveness 3. Pile erection 4. Grooming 5. Gripping 6. Touch Response 7. Increased Motor Activity 8. Tremors 9. Convulsions 10. Muscle Spasm 11. Catatonia 12. Muscle relaxant 13. Hypnosis 14. Analgesia 15.Lacrimation 16. Exophthalmos 17. Diarrhoea 18. Writhing 19. Respiration 20. Number of Deaths (Mortality)

ANTI-MICROBIAL ACTIVITY RESULTS

The results of the antimicrobial activity indicate that the *Palagarai Parpam* is effective against standard strains of *Staphylococcus aureus, Klebsiella pneumoniae, Trichomonas, Proteus vulgari*s. The minimum inhibitory concentrations (MICs) of the *Palagarai Parpam* against the test organisms are shown in Table 15. The *Palagarai Parpam* showed activity against *Staphylococcus aureus* was found to be excellent. But the activity against *Trychomonas and proteus* was moderate and effective at higher dose level (Table-15). The control did not produce any inhibitory activity against the organisms. The zone of inhibition produced by *Palagarai Parpam* against standard strains of *Candida, Esherichia coli,* was much lower or negligible (3mm).3

Table15: In vitro antimicrobial activity of 10, 20, 30µg /ml of the Palagarai Parpam.

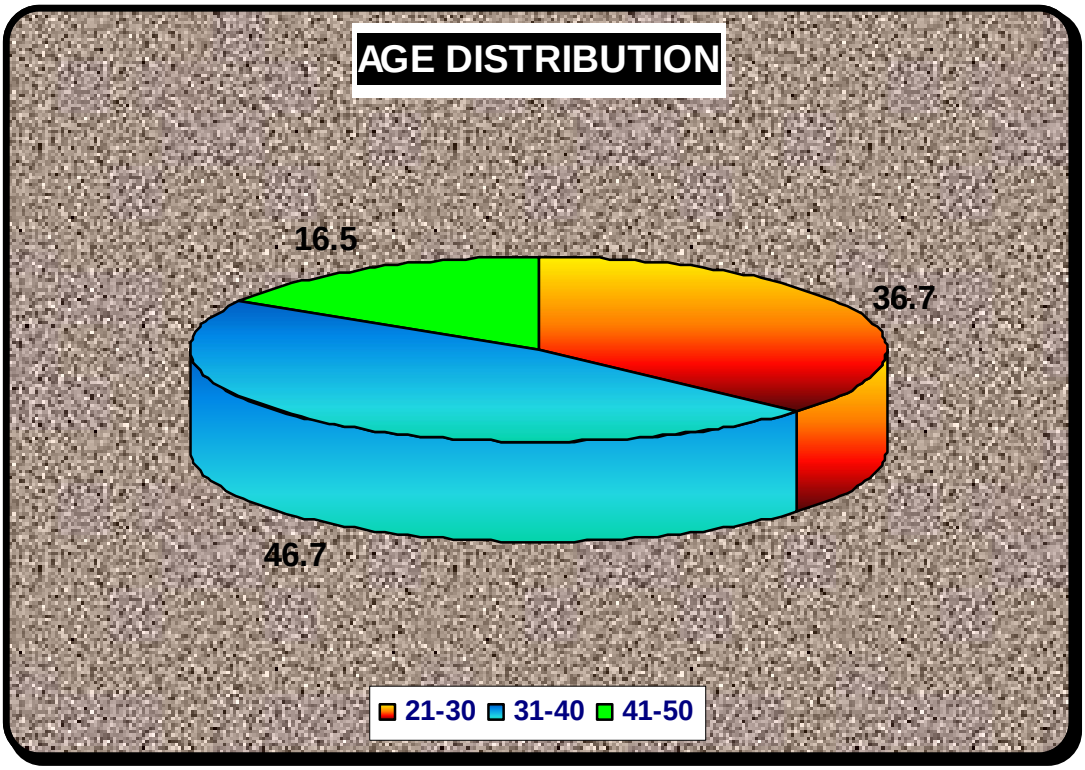
Organisms	Mean diameter of zone of inhibition in mm			
	Control	10µg/ml	20µg/ml	30µg/ml
Esherichia coli	0	0	0	0
Klebsiella pneumoniae	0	0	0	6
Trichomonas vaginalis	0	0	0	6
Staphylococcus aureus	0	6	8	13
Proteus	0	0	6	6
Candida albicans	0	0	0	0



CLINICAL ASSESSMENT

Table 16. Age Distribution:

Age	Cases	
	No.	Percentage
21-30	11	36.7
31-40	14	46.7
41-50	5	16.5



According to age distribution :-

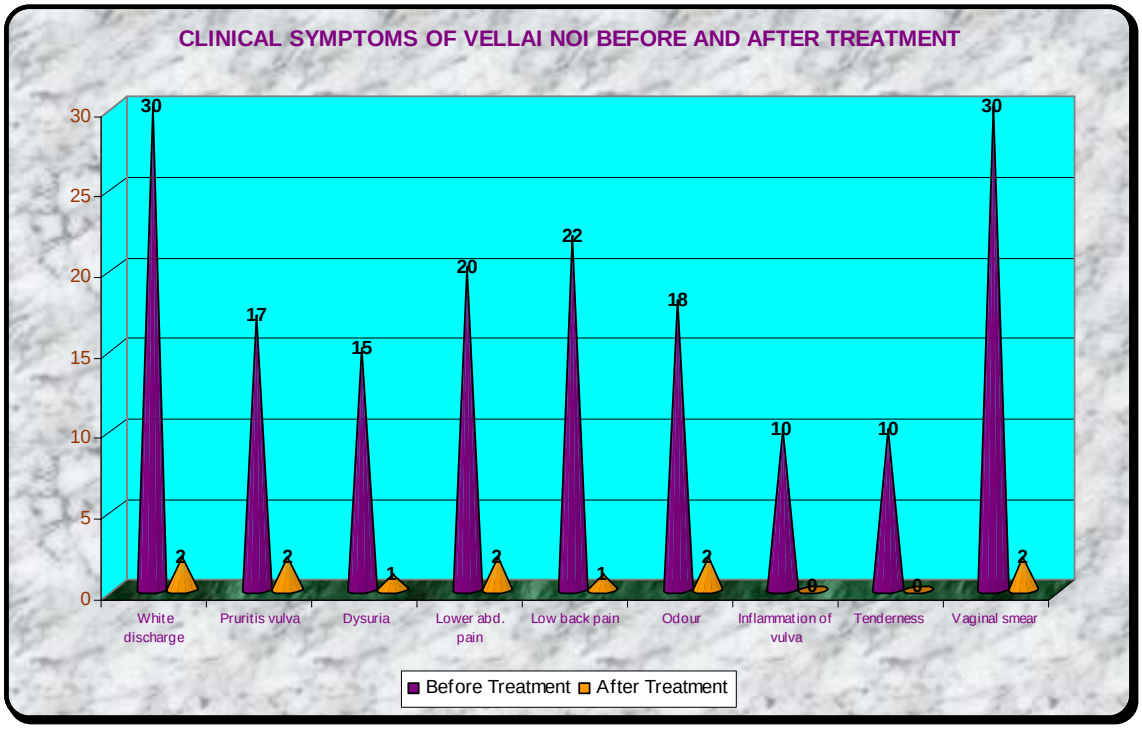
36.7 % of cases were in below 30.

46.7 % of cases were in below 40.

16.5 % of cases were in below 50

Table 17. Distribution of clinical symptoms of vellai noi before and after treatment

S. No	Signs & Symptoms	Before Treatment	After Treatment	Improvement
1	Yellowish purulent discharge	30	2	93%
2	Pruritis vulva	17	2	88%
3	Dysuria	15	3	80%
4	Lower abd. pain	20	2	90%
5	Low back pain	22	2	90.9%
6	Odour	18	2	88.9 %
7	Inflammation of vulva	10	0	100 %
8	Tenderness	10	0	100 %
9.	Trichomoniasis	30	2	93.33%



OBSERVATION

Yellowish purulent discharge

Out of 30 cases with initial symptom of white discharge only 2 cases had white discharge after treatment i.e 93% of cases did not have the symptom of Yellowish purulent discharge.

Pruritus vulva

Out of 17 cases with initial symptom of Pruritus vulva only 2 cases had Pruritus vulva after treatment i.e 88 % of cases did not have the symptom of Pruritus vulva.

Dysuria

Out of 15 cases with initial symptom of Dysuria only 3 cases had Dysuria after treatment i.e 80 % of cases did not have the symptom of Dysuria.

Lower abdominal Pain

Out of 20 cases with initial symptom of Lower abdominal pain only 2 cases had Lower abdominal pain after treatment i.e 90 % of cases did not have the symptom of Lower abdominal pain.

Low back Pain

Out of 22 cases with initial symptom of Low back pain only 2 cases had Low back pain after treatment i.e 90.9 % of cases did not have the symptom of Low back pain.

Odour

Out of 18 cases with initial symptom of Odour only 2 cases had Odour after treatment i.e 88.9 % of cases did not have the symptom of Odour.

Inflammation of vulva

Out of 10 cases with initial symptom of Inflammation of vulva, no cases had Inflammation of vulva after treatment i.e 100 % of cases did not have the symptom of Inflammation of vulva.

Out of 10 cases with initial symptom of Tenderness , no cases had Tenderness after treatment i.e 100 % of cases did not have the symptom of Tenderness.

Trichomoniasis

Out of 30 cases with initial symptom of Trichomoniasis only 2 cases had Trichomoniasis after treatment i.e 93.33 % of cases did not have the symptom of Trichomoniasis .

From the clinical and statistical analysis, it is proved that the drug Palagarai parpam is stastically significant.

CASE SHEET OF VELLAI NOI PATIENTS

S.NO	OP.NO	NAME	A/S	Yel . pru discharge		Pruritis Vulva		Dysuria		Low.abd. pain		Low.back pain		Odour		Inf.of . vulva		Tender ness		Vag.smear Tri.vaginalis	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1.	AG469	Ammu	23/F	+	+	+	+	+	-	+	-	+	-	+	+	-	-	-	-	+ ve	- ve
2.	AG915	Girija	33/F	+	-	-	-	-	-	+	-	+	-	+	-	-	-	-	-	+ ve	- ve
3.	AG914	Buvanerwari	26/F	+	-	+	-	-	+	-	-	-	-	+	+	-	-	-	-	+ ve	- ve
4.	AG2239	Gunasundari	24/F	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+ ve	- ve
5.	AG2256	Sasi	32/F	+	+	+	+	+	+	+	-	+	-	+	-	+	-	+	-	+ ve	- ve
6.	AG2358	Chellamal	31/F	+	-	+	-	-	+	+	-	+	-	+	-	+	-	+	-	+ ve	- ve
7.	AG2377	Kanniyammal	25/F	+	-	+	-	+	-	-	-	+	-	+	-	+	-	+	-	+ ve	- ve
8.	AG2478	Radha	42/F	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	+ ve	+ ve
9.	AG2035	Santhi	40/F	+	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	+ ve	+ ve
10.	AG3495	Pavithra	25/F	+	-	+	-	+	+	+	-	+	+	+	-	-	-	-	-	+ ve	- ve
11.	AG2742	Jamela	35/F	+	-	-	-	+	-	+	-	+	-	+	-	+	-	+	-	+ ve	- ve
12	AG 2916	Rajeswari	40/F	+	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	+ ve	- ve
13	AG3170	Amithabanu	30/F	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+ ve	- ve
14.	AG3189	Amaravathi	32/F	+	-	+	-	-	-	+	-	+	-	+	-	+	-	+		+ ve	- ve
15	AG3201	Viji	22/F	+	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	+ ve	- ve
16	AG3245	Kumareswari	25/F	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	+ ve	- ve
17	AG3782	Kalaiyarashi	35/F	+	-	+	-	-	-	+	-	+	+	-	-	-	-	+	-	+ ve	- ve
18	AG3919	Reeta	25/F	+	-	+	-	-	-	+	-	+	-	+	-	-	-	+	-	+ ve	- ve
19	AG4421	Kalaivani	24/F	+	-	-	-	+	-	-	-	+	-	+	-	-	-	+	-	+ ve	- ve
20	AG4439	kaliammal	44/F	+	-	+	-	-	-	+	+	+	-	+	-	-	-	+	-	+ ve	- ve
21	AG4972	Kamatchi	28/F	+	-	-	-	+	-	+	+	+	-	+	-	+	-	-	-	+ ve	- ve
22.	AG6284	Gracy	32/F	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+ ve	- ve
23.	AG6285	Susila	30/F	+	-	+	-	-	-	+	-	+	-	+	-	+	-	-	-	+ ve	- ve
24	AG5698	Vahitha	42/F	+	-	-	-	+	-	+	-	+	-	+	-	+	-	-	-	+ ve	- ve
25.	AG6610	Malliga	32/F	+	-	-	-	+	-	+	-	+	-	+	-	+	-	-	-	+ ve	- ve
26.	AG6611	Mary kalpana	39/F	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	+ ve	- ve
27	AG2567	Malar	30/F	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	+ ve	- ve
28	AG2995	Faritha	42/F	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+ ve	- ve
29	AG2140	Kamala	39/F	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+ ve	- ve
30	AG5316	Vithubala	32/F	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+ ve	- ve

BLOOD ANALYSES OF VELLAI NOI PATIENTS

SNO	OP NO	NAME	A/S	BEFORE TREATMENT							AFTER TREATMENT							Vaginal PH	
				TC cells/ cumm	DC				ESR ½ /1 hr	Hb gm %	TC cells/ cumm	DC				ESR ½ /1 hr	Hb gm %	BT	AT
					P %	L %	E %	M %				P%	L %	E %	M %				
1.	AG469	Ammu	23/F	6800	55	41	4	0	12.22	12.9	8000	54	42	4	0	4/8	12.9	6	5
2.	AG915	Girija	33/F	6000	55	42	4	0	12/22	12	6000	55	42	4	0	10/20	12	7	5
3.	AG914	Buvanerwari	26/F	8900	57	38	4	0	6/14	12.1	9000	57	38	4	0	6/10	12.5	6	4.5
4.	AG2239	Gunasundari	24/F	6900	54	40	5	1	5/13	12.4	7000	54	40	5	1	5/10	12	6	5
5.	AG2256	Sasi	32/F	7300	55	38	7	0	10/22	12.6	6200	50	43	5	0	7/16	15	7	4.5
6.	AG2358	Chellamal	31/F	7000	55	40	5	0	10/22	12	7000	55	38	5	0	10/20	14	6.5	5
7.	AG2377	Kanniyammal	25/F	6800	52	40	7	1	10/22	12	7000	50	40	5	1	10/20	12	6	5
8.	AG2478	Radha	42/F	10800	56	40	4	0	10/22	14	10800	50	40	4	0	10/20	14	5.5	5
9.	AG2035	Santhi	40/F	6800	60	35	4	0	8/19	12	7000	60	40	4	0	7/14	12	6	4
10.	AG3495	Pavithra	25/F	7000	54	40	4	0	6/12	10	7000	50	40	4	0	6/12	10	6	4
11.	AG2742	Jamela	35/F	6200	51	40	7	0	7/15	12	7000	50	40	6	0	6/12	12	6.5	4
12	AG 2916	Rajeswari	40/F	6500	60	35	5	0	2/5	13	6000	55	35	4	0	2/4	12	7	5
13	AG3170	Amithabanu	30/F	7300	60	36	3	0	6/13	12	7000	55	35	3	0	6/12	12	6	5.5
14.	AG3189	Amaravathi	32/F	6300	52	44	3	0	6/12	5	7200	53	42	2	0	9/20	16	7	5
15	AG3201	Viji	22/F	9100	53	40	5	0	6/13	10	9100	50	40	4	0	6/12	10	6	4.5
16	AG3245	Kumareswari	25/F	7300	52	40	4	0	10/20	12	7200	50	40	4	0	10/20	12.5	6	5
17	AG3782	Kalaiyarashi	35/F	7400	56	40	4	0	8/16	12	7400	50	40	4	0	8/10	11	7	5
18	AG3919	Reeta	25/F	7000	50	42	6	0	3/7	15	7000	50	40	4	0	3/7	14	6	5
19	AG4421	Kalaivani	24/F	6800	50	40	4	1	6/15	10	7000	55	40	4	1	3/6	11	6	5.5
20	AG4439	kaliammal	44/F	7000	52	46	2	1	5/12	15	7000	50	40	2	1	5/10	15	5.5	4
21	AG4972	Kamatchi	28/F	6500	57	40	3	0	6/10	10	6500	50	40	2	0	6/10	10	6	4
22.	AG6284	Gracy	32/F	6800	56	40	4	0	11/22	10	6000	56	40	4	0	10/20	11	5.5	4
23.	AG6285	Susila	30/F	5000	50	49	1	1	5/10	11	5000	50	40	2	1	5/10	11	6	5
24	AG5698	Vahitha	42/F	6800	50	40	4	0	6/12	12	7000	50	35	4	0	5/10	13	7	4
25.	AG6610	Malliga	32/F	6200	59	38	3	0	20/40	10	6200	50	38	4	0	10/20	12	6	4
26.	AG6611	Mary kalpana	39/F	7200	54	42	3	0	4/8	10	7200	50	42	3	0	4/8	10	6.5	4.5
27	AG2567	Malar	30/F	5000	55	43	2	0	6/15	11.2	5500	55	40	2	0	6/12	11.2	6	4
28	AG2995	Faritha	42/F	6200	50	41	2	0	5/12	12.6	6000	50	45	2	0	6/12	13	6.5	5
29	AG2140	Kamala	39/F	7900	54	42	4	0	8/16	12.3	7000	55	40	5	0	2/4	12	7	5
30	AG5316	Vithubala	32/F	7000	54	40	4	0	2/4	12	7000	50	35	4	0	2/4	12	5.5	4

BLOOD ANALYSIS OF VELLAI NOI PATIENTS

SNO	OPNO	NAME	A/S	BEFORE TREATMENT					AFTER TREATMENT					VDRL	
				TRBC/ million	RBS mg%	Urea mg%	Creatinine mg%	Choles terol mg%	TRBC/ million	RBS mg%	Urea mg%	Creatinine mg%	Choles terol mg%	BT	AT
1.	AG469	Ammu	23/F	4.3	98	18	0.6	150	4	95	18	0.6	130	-ve	-ve
2.	AG915	Girija	33/F	4.2	95	15	0.6	140	4.2	90	15	0.6	140	-ve	-ve
3.	AG914	Buvanerwari	26/F	4	78	24	0.8	148	4	78	24	0.8	148	-ve	-ve
4.	AG2239	Gunasundari	24/F	4.2	73	21	0.8	140	4	72	20	0.8	140	-ve	-ve
5.	AG2256	Sasi	32/F	3.5	112	21	0.8	120	4.3	122	28	0.8	130	-ve	-ve
6.	AG2358	Chellamal	31/F	3	110	20	0.8	130	3.5	110	20	0.8	120	-ve	-ve
7.	AG2377	Kanniyammal	25/F	3	81	19	0.8	120	3	80	18	0.8	120	-ve	-ve
8.	AG2478	Radha	42/F	4.4	74	19	0.7	130	4.4	70	19	0.7	120	-ve	-ve
9.	AG2035	Santhi	40/F	4.3	89	25	0.8	140	4.2	70	20	0.8	120	-ve	-ve
10.	AG3495	Pavithra	25/F	4	80	20	0.7	120	4	80	20	0.6	130	-ve	-ve
11.	AG2742	Jamela	35/F	3.6	86	28	0.8	207	4	86	20	0.8	180	-ve	-ve
12	AG 2916	Rajeswari	40/F	4	76	19	0.6	163	4	70	18	0.6	160	-ve	-ve
13	AG3170	Amithabanu	30/F	4	120	31	0.8	193	4	120	30	0.8	180	-ve	-ve
14.	AG3189	Amaravathi	32/F	4.2	84	21	0.8	200	4.5	99	14	0.7	200	-ve	-ve
15	AG3201	Viji	22/F	4.8	124	21	0.8	173	4.4	120	20	0.8	170	-ve	-ve
16	AG3245	Kumareswari	25/F	4	120	18	0.8	120	4	120	16	0.8	125	-ve	-ve
17	AG3782	Kalaiyarashi	35/F	3.5	125	18	0.6	160	4	120	16	0.6	155	-ve	-ve
18	AG3919	Reeta	25/F	4.4	120	19	0.8	178	4	120	18	0.8	170	-ve	-ve
19	AG4421	Kalaivani	24/F	4.2	180	15	0.6	190	4	150	15	0.6	185	-ve	-ve
20	AG4439	kaliammal	44/F	4	75	27	0.8	230	4	70	20	0.8	200	-ve	-ve
21	AG4972	Kamatchi	28/F	4	80	20	0.8	190	4	80	18	0.8	180	-ve	-ve
22.	AG6284	Gracy	32/F	4	99	22	0.8	121	4	90	20	0.8	120	-ve	-ve
23.	AG6285	Susila	30/F	2.5	100	18/	0.6	118	3	90	18	0.6	120	-ve	-ve
24	AG5698	Vahitha	42/F	4	125	17	0.6	125	4	120	16	0.6	120	-ve	-ve
25.	AG6610	Malliga	32/F	2.1	80	13	0.8	128	3	80	13	0.8	120	-ve	-ve
26.	AG6611	Mary kalpana	39/F	3.5	85	12	0.8	102	3	85	12	0.6	120	-ve	-ve
27	AG2567	Malar	30/F	3.5	83	14	0.8	169	3.5	80	14	0.8	160	-ve	-ve
28	AG2995	Faritha	42/F	4.2	87	15	0.8	228	4.2	85	15	0.8	220	-ve	-ve
29	AG2140	Kamala	39/F	4	84	14	0.4	197	4	83	14	0.5	187	-ve	-ve
30	AG5316	Vithubala	32/F	4	80	12	0.8	190	4	80	12	0.7	180	-ve	-ve

URINE ANALYSIS OF VELLAI NOI PATIENTS

SNO	OP/IPNO	NAME	A/S	BEFORE TREATMENT						AFTER TREATMENT					
				Alb	Sug	Deposits				Alb	Sug	Deposits			
						Pus cells	Epi cells	RBC's	Casts/ crystals			Pus cells	Epi cells	RBC's	Casts/ crystals
1.	AG469	Ammu	23/F	Nil	Nil	2-3	2-3	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
2.	AG915	Girija	33/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-6	Nil	Nil
3.	AG914	Buvanerwari	26/F	Nil	Nil	4-6	2-4	Nil	Nil	Nil	Nil	2-4	5-6	Nil	Nil
4.	AG2239	Gunasundari	24/F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
5.	AG2256	Sasi	32/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
6.	AG2358	Chellamal	31/F	Nil	Nil	4-6	2-4	Nil	Nil	Nil	Nil	4-6	2-4	Nil	Nil
7.	AG2377	Kanniyammal	25/F	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
8.	AG2478	Radha	42/F	Nil	Nil	1-2	1-2	Nil	Nil	Nil	Nil	2-4	2-5	Nil	Nil
9.	AG2035	Santhi	40/F	Nil	Nil	4-6	2-4	Nil	Nil	Nil	Nil	1-2	4-5	Nil	Nil
10.	AG3495	Pavithra	25/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
11.	AG2742	Jamela	35/F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil
12	AG 2916	Rajeswari	40/F	Nil	Nil	2-4	1-2	Nil	Nil	Nil	Nil	1-2	1-2	Nil	Nil
13	AG3170	Amithabanu	30/F	Nil	Nil	1-2	2-5	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
14.	AG3189	Amaravathi	32/F	Nil	Nil	1-2	2-6	Nil	Nil	Nil	Nil	2-5	4-6	Nil	Nil
15	AG3201	Viji	22/F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	3-5	2-5	Nil	Nil
16	AG3245	Kumareswari	25/F	Nil	Nil	1-2	1-2	Nil	Nil	Nil	Nil	4-5	1-4	Nil	Nil
17	AG3782	Kalaiyarashi	35/F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil
18	AG3919	Reeta	25/F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil
19	AG4421	Kalaivani	24/F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil
20	AG4439	Kaliammal	44/F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil
21	AG4972	Kamatchi	28/F	Nil	Nil	1-2	1-2	Nil	Nil	Nil	Nil	1-2	1-2	Nil	Nil
22.	AG6284	Gracy	32/F	Nil	Nil	1-2	4-6	Nil	Nil	Nil	Nil	2-3	2-5	Nil	Nil
23.	AG6285	Susila	30/F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	2-4	2-3	Nil	Nil
24	AG5698	Vahitha	42/F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
25.	AG6610	Malliga	32/F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
26.	AG6611	Mary kalpana	39/F	Nil	Nil	2-4	1-2	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
27	AG2567	Malar	30/F	Nil	Nil	3-4	1-6	Nil	Nil	Nil	Nil	1-2	1-2	Nil	Nil
28	AG2995	Faritha	42/F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-6	Nil	Nil
29	AG2140	Kamala	39/F	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	1-2	1-3	Nil	Nil
30	AG5316	Vithubala	32/F	Nil	Nil	1-2	1-2	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil

DISCUSSION

The drug palagari parpam was selected to find its efficacy in the treatment of vellai noi. The literary evidence strongly support anti-inflammatory and analgesic activity of the drug.

Bio-chemical analysis of the drug palagari parpam reveals, the presence of calcium, chloride, carbonate, zinc and magnesium.

Zinc kills the gram +ve and gram –ve bacterium, fungi, yeast and candida.

Magnesium and zinc (metalic oxides) effective against gram +ve bacterium and candida.

Anti-microbial activity of the drug was done in Vel's College, Pallavaram. The drug Palagari parpam has anti-microbial activity against **Staphylococcus aureus, Klelbsiella Pneumoniae, Trychomonas, and Proteus vulgaris,**

In acute toxicity study, oral administration of Palagarai parpam did not produce any mortality in mice upto a dose level of 4 gm/kg. This may be due to the broad non- toxic range of the drug.

The active principles of the *Palagarai Parpam* elicited antibacterial activity appeared to have remarkable activity against few bacteria. This observation could possibly justify the usefulness of the *Palagarai Parpam* as clinical reports in siddha system of medicine. The *Palagarai Parpam* presents narrow spectrum antibacterial activity.

There was no activity against E. coli and Candida. However, the activity shown against susceptible organisms, as observed in this study, would appear to justify the ethnomedicinal use in recipes for infections. Further studies required characterizing and identifying the bioactive constituent responsible for the specific antimicrobial activity**.**

SIDDHA ASPECT

According to Theraiyar dearrangement of Pitha causes Meganoigal.

”பகர்பித்த விந்தையலாது மேகம் வராது”

According to arusuvai theory,

”பித்த மதிகரிப்பின் பேசும் பரிகாரம்
சுத்தத் துவரோடு சொல்லினிப்புச் - சத்தாகும்
கைப்புச் சுவையே கருதவதன் வீறு
எய்ப்படையு மென்று ரைத்தாரிங்கு”

Kaippu suvai reduces the pitha kutram. The drug Palagarai has kaipu suvai. So it neutralizes the pittha kutram.

SUMMARY AND CONCLUSION

The drug Palagarai parpam has selected for the study to evaluate its efficacy in management of Vellai noi

The literature collection describes the Anti- microbial activity of the drug

The chemical analysis of the drug Palagarai parpam reveals the presence of calcium, chloride, carbonate, zinc and magnesium

Pharmacological studies showed that the drug has significant Anti- microbial activity at the dose of 400 mg/kg and no significant adverse effects

Anti- microbial study reveal that the drug Palagarai parpam has anti- microbial effect against ***Staphylococcus aureus, Klebsiella pneumoniae, Trychomonas vaginalis & Proteus vulgaris.***

30 patients with signs and symptoms of Vellai Noi were selected, and a thorough observation was made.

Clinically, no adverse effects were reported during the course of treatment

The improvement shown after treatment in terms of clinical symptoms viz. Yellow purulent discharge, Pruritis vulva, Dysuria, Lower abdominal pain, Low back pain, Odour, Inflammation of vulva& Tenderness were statistically significant.

Conclusion

From the pharmacological studies and clinical study, it was concluded that the drug Palagarai parpam has significant anti- microbial activity . Thus it gives us a new hope in the management of Vellai Noi (Leucorrhoea).

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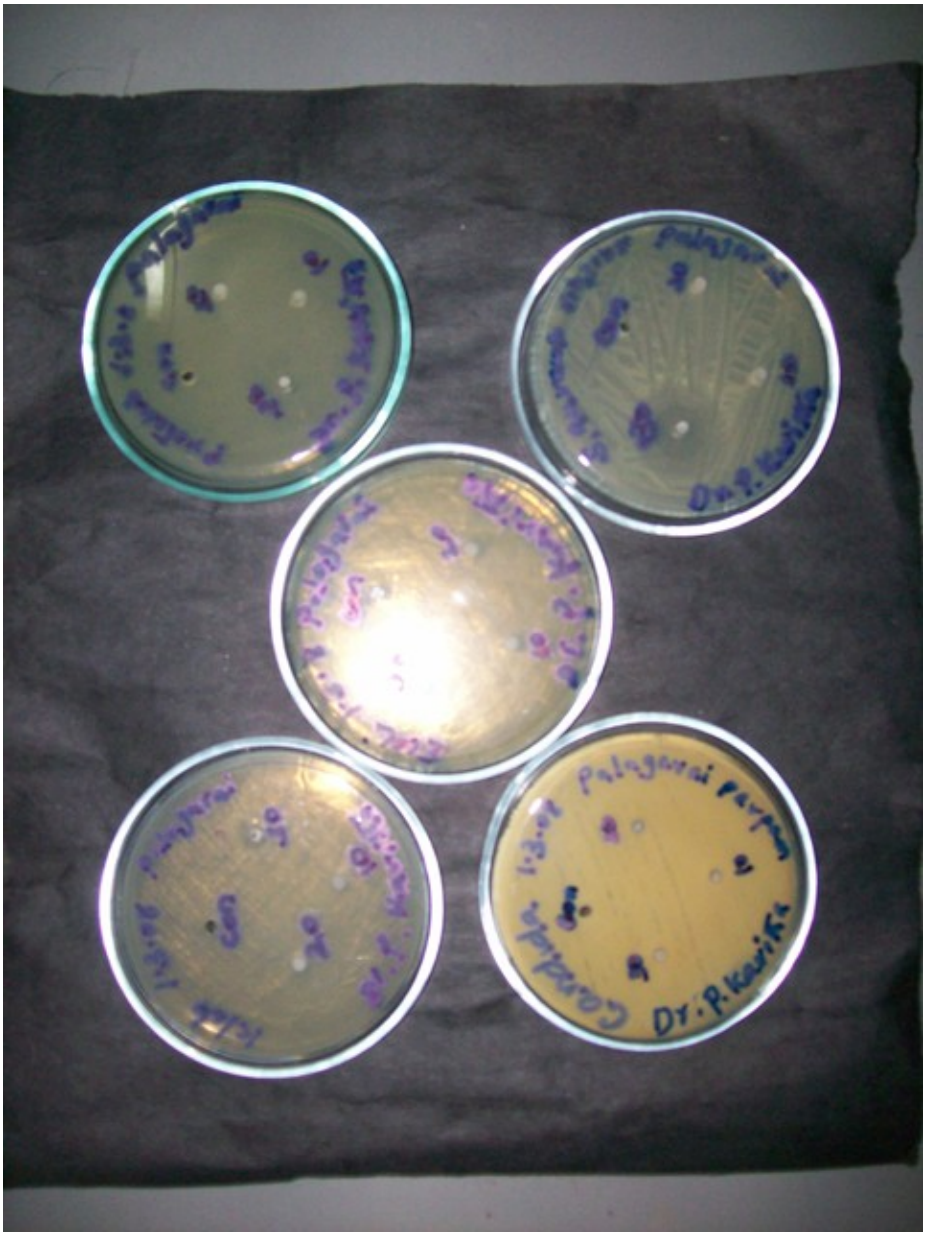
UNPURIFIED PALAGARAI

Cypraea moneta, Linn

CITRUS LIMON

PURIFIED PALAGARAI PARPAM



PROTEUS VULGARIS

STAPHYLOCOCCUS AUREUS

ESCHERICHIA COLI

KLEBSIELLA PNEUMONIAE

CANDIDA ALBICANS

TRICHOMONAS VAGINALIS

KORAI KIZHANGU

Cyperus rotundus, Linn

UNPURIFIED KORAI KIZHANGU

Cyperus rotundus, Linn

PURIFIED KORAI KIZHANGU CHOORNAM

X-Rays of Calcaneal Spur

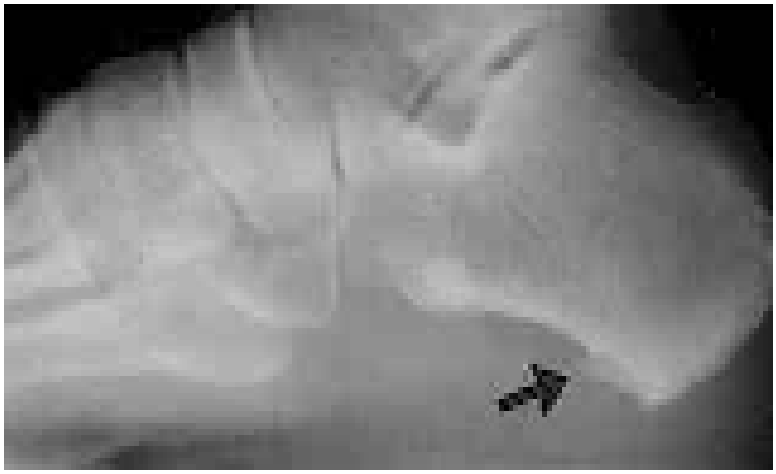


Figure No.1. Photomicrograph of rat Femur in Group I (Normal control)

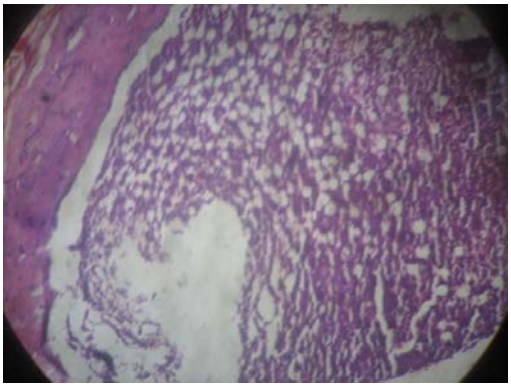


Figure No.2. Photomicrograph of rat Femur in Group II, treated with Korai kizhangu choornam @ 200 mg/kg showing normal bone

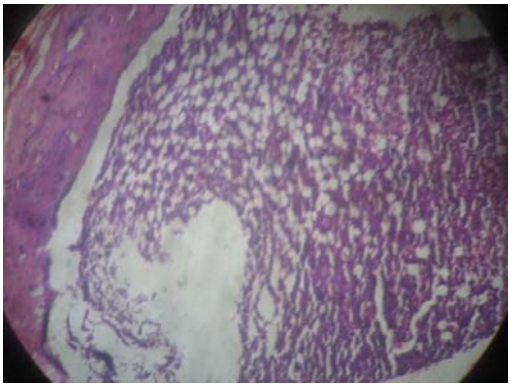
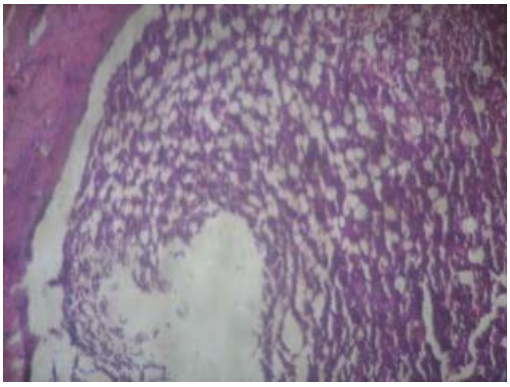


Figure No.3. Photomicrograph of rat Femur in Group III, treated with Korai kizhangu choornam @ 400 mg/kg showing normal bone



From

Dr. P. Kavitha,
M.D.(S) 2rd year,
Dept. of Gunapadam
National Institute of siddha,
Chennai-47.

TO

The head of the department,
Dept. of Gunapadam
National Institute of siddha,
Chennai-47

Respected sir,

Sub: regarding- topic selection

I am doing my 2rd M.D(S) in this institute. Here , I have selected the following topics as my dissertion work (2005-2008).

Topic-1: study on **Palagarai parpam** for **vellai noi**

Intended therapeutic dose: 1-1.5 kundrimani(130-195mg)for 2 times a day**.**

Vehicle: Butter(vennai)

Days: ½ mandalam(24 days)

Reference: Padhatha guna vilakam(Thathu Jeeva Vaguppu),pageno:261

Topic 2: study on **Korai kizhangu choornam** for **Kuthi kaal vatham**

Intended therapeutic dose: 1 gm for 3 times a day.

Vehicle: water

Days: 1 mandalam(48 days)

Reference: Gunapadam Mooligai Vaguppu: page no:410

So please kindly permit me and forward this topic for me to proceed my dissertion work.

Thanking you

Yours faithfully,

Date : 24.05.2007)

(P. Kavitha)

Place: Chennai- 47.

Font: TSCu_InaiMathi

PROTOCOL

AN OPEN CLINICAL TRIAL OF SIDDHA DRUG *KORAI KIZHANGU CHOORNAM* FOR THE TREATMENT OF *KUTHI KAAL VATHAM* (CALCANEAL SPUR) - A PILOT STUDY

BY

Dr. P. KAVITHA, PG STUDENT , DEPT. OF GUNAPADAM, NIS, CHENNAI.

1. BACKGROUND

A calcaneal spur is a small bony projection that is formed on the calcaneas or heel bone. It is caused by putting too much pressure on the sinew on the soles of the feet, usually over a period of long time.

In *Gunapadam Mooligai* by K.S. Murugesha Mudhaliyar, *Korai Kizhangu* was mentioned for *Kuthi Kaal Vatham*, whose efficacy has to be evaluated.

2. ABOUT THE DRUG

a. Trial drug, dosage and duration

Korai Kizhangu Choornam – 1 g b.d. with honey after food for 48 days

“«¾¢°¡Ãõ À¢ò¾õ «ÉüÈ¡¸õ ³Âí
Ì¾¢Å¡¾õ §°¡Àõ ¦¸¡ÊÂ Ó¾¢÷Å¡ó¾¢
Â¡¨Ãò¦¾¡¼÷ó¾¡Öõ «ùÅÅ÷ì¦¸ Ä¡íÌÇòÐì
§¸¡¨Ãì¸¢Æí¨¸ì ¦¸¡Î “

As Korai Kizhangu is mentioned in the above text for Kuthi Vatham, the drug Korai Kizhangu is selected for Kuthi Kaal Vatham.

b. Diet

Avoid tomato, cabbage, cauli flower, potato, green plantain, tamarind, brinjal, bitter guard and sesban,

c. Mukkutra Vaerupadu

As it is mentioned as “Å¡¾ÁÄ¡Ð §ÁÉ¢ ¦¸¼¡Ð”
in Theran karisal, naadi for *Kuthi Kaal Vatham* is Vatham. So it is came to know that the siddha aetiology for *Kuthi Kaal Vatham* is Vatha and due to variation of vatha kuttram.

“Å¡¾¦ÁÛõ ¿¡ÊÂÐ §¾¡ýÈ¢ø °£¾õ

°£¾ÓÚõ ¸¢Ã¡½¢ Á§¸¡¾Ãõ ¿£Ã¡¨Á
¾¢ÃûÅ¡Ô Ý¨Ä ÅÄ¢ ¸Îôò ¾£¨Ã”

3. AIMS

Primary aim

To estimate the efficacy of *Korai Kizhangu Choornam* in the treatment of *Kuthi Kaal Vatham.*

Secondary aim

To find out the side effects of the drug, if any.

4. POPULATION AND SAMPLE

The population consists of *Kuthi Kaal Vatham* patients (Spike of Bone at the anterior edge of the Calcaneal tuberosity) satisfying the inclusion and exclusion criteria mentioned below.

The sample consists of *Kuthi Kaal Vatham* patients attending the OPD of Ayothidoss Pandidhar Hospital of the National Institute of Siddha, Chennai – 47.

5. SAMPLE SIZE

The trial size will be 30 patients aged between 30 – 45 years.

6. SELECTION CRITERIA

a. Inclusion criteria

1. Age group 30 – 45 years,
2. Willing to attend the OPD once in a weak for 7 weeks.
3. Heel Pain.
4. X-Ray heel shows calcaneal growth.

b. Exclusion criteria

1. Rheumatoid arthritis,
2. Gout,
3. Osteoarthritis,
4. Osteomalacia,
5. Osteosporosis,
6. Osteosarcoma.

c. Withdrawal criteria

1. Drug intolerance.
2. Any other acute illness.

7. TESTS & ASSESSMENTS

a. Clinical assessment

1 .Pain over ball of heel.
2. Tenderness on plantar aspect of heel.
3. Swelling at the attachment of Plantar fascia.

b. Tests

Blood

TC (Cells / Cu mm), DC (%), ESR (mm / hr), Hb (g %), Sugar (mg %), Serum calcium level.

Urine

Albumin, Sugar, Deposit

X ray foot

c. Siddha assessment

En vagai thaervu,
Neer kuri,
Nei kuri.

8. CONDUCT

Kuthi Kaal vatham patients satisfying the inclusion and exclusion criteria are selected for the study(Form 1). Informed consent will be obtained from the patients.

The trail patients will be issued drugs for 7 days at a time. They will be instructed to come for next clinic visit after 7 days. Also, they will be asked to bring back the unconsumed drug during their next visit and return the same. Clinical assessments will be done during each clinic visit. Lab tests and X-ray will be carried out before admission to the trial.

9. FORMS

Form 1

Selection proforma used before admission to the trial.

Form 2

Assessment proforma used during clinic visits once in 7 days.

10. ANALYSIS

The difference in the proportions of patients with signs& symptoms before and after treatment will be analysed using paired X^2– tests.

PROTOCOL

PRE-CLINICAL PHARMACOLOGICAL EVALUATION OF *KORAI KIZHANGU CHOORNAM* FOR ANTI-INFLAMMATORY AND ANALGESIC ACTIVITY

BY

Dr. P. KAVITHA, PG STUDENT , DEPT. OF GUNAPADAM, NIS, CHENNAI.

1. BACKGROUND

The drug *Korai kizhangu choornam* has been mentioned in *Gunapadam Mooligai* for *Nalir suram, Muppini, kurithi azhai noi, Sura vagaigal, Neer vaetkai, kazhichal, Payithia thodam, pitttha thagam, Kaba rogam, Kuthi kaal vatham, Vandhi*. It is believed that this drug will have good effect against *Kuthi kaal vatham*. So this drug has been selected for the evaluation of anti inflammatory and analgesic activity in *Kuthi Kaal Vatham.*

2. AIMS

Primary aim

To assess the anti-inflammatory and analgesic activity of *Korai Kizhangu Choornam* in albino rats and analgesic activity in swiss albino mice

Secondary aim

1. Biochemical analysis,
2. Physical properties,
3. Pharmacognostic study,
4. Phytochemical study.

3. TEST COMPOUND

Korai Kizhangu Choornam

Reference: *Gunapadam Mooligai*

4. INTENDED THERAPEUTIC USE

Korai Kizhangu Choornam 1 g b.d with honey is given for for Kuthi Kaal Vatham

5. ROUTE OF ADMINISTRATION

Oral route

6. EXPERIMENTAL DETAILS

A. EVALUATION OF ANTI-INFLAMMATORY ACTIVITY

1. CARRAGEENAN INDUCED PAW OEDEMA

Acute inflammation will be produced by subplantar injection of 0.1 ml of 1% suspension of carrageenan in normal saline in the right hind paw of the rats. Paw volume will be measured plethysmometrically at '0' to '2' hours after carrageenan injection. The animals will be divided into three groups. The animals will be treated with *Korai Kizhangu Choornam* orally. Palm jaggery treated animals will serve as control, and Diclofenac sodium (45mg/kg orally) will be administered as standard drug. The drugs will be administered simultaneously with carrageenan injection. Mean increase in paw volume will be measured and percentage of inhibition will be calculated.

TEST GROUPS

Group number	Test groups	No. of animals
1	Control (Palm jaggery)	6 [3M+3F]
2	Test dose (5mg)	6 [3M+3F]
3	TD (10 mg)	6 [3M+3F]
4	TD (15 mg)	6 [3M+3F]
5	Standard drug (Diclofenac sodium phosphate)	6 [3M+3F]

OBSERVATIONS

Paw oedema- the paw volume will be measured just before and at ½, 1, 1½ and 2 hours after administration of carrageenan by the volume displacement method using a plethismometer.

2. FREUND'S COMPLETE ADJUVANT INDUCED ARTHRITIS

The right hind foot will be measured for thickness with the aid of a micromanometer. The foot will be injected with Freund's adjuvant; 0.05ml will be given intradermally beneath the plantar surface. *Korai Kizhangu Choornam* at varying doses will be administered orally to different groups of animals daily for 28 days. The thickness of the injected foot will be measured and the percent increase in thickness will be calculated.

TEST GROUPS

Group number	Test groups	No. of animals
1	Control (palm jaggery)	6 [3M+3F]
2	Test dose (5 mg)	6 [3M+3F]
3	TD (10 mg)	6 [3M+3F]
4	TD (15 mg)	6 [3M+3F]
5	Standard drug (Diclofenac sodium phosphate)	6 [3M+3F]

OBSERVATIONS

Paw oedema- the paw volume will be measured just before and at ½, 1, 2, 4, 8, 12 and 24 hours after administration of Freund's adjuvant by using a caliper ruler.

B. EVALUATION OF ANALGESIC ACTIVITY

EDDY'S HOT PLATE METHOD

Analgesic activity of *Korai kizhangu choornam* will be assessed by the Eddy's hot plate method in mice. Groups of 6 mice of either sex with an initial weight of 22 to 41 grams will be used. The temperature will be controlled for 55° to 56°C. The animals will be placed on the hot plate and a stopwatch will record the time until either licking or jumping occurs. The latency will be recorded before and after 15, 30, 60 and 90 minutes following oral or intraperitoneal administration of the test or the standard compound.

TEST GROUPS

Group number	Test groups	No. of animals
1	Control (Palm jaggery)	6 [3M+3F]
2	Test dose (5 mg)	6 [3M+3F]
3	TD (10 mg)	6 [3M+3F]
4	TD (15 mg)	6 [3M+3F]
5	Standard drug (Diclofenac sodium phosphate)	6 [3M+3F]

OBSERVATION

Licking of the fore or hind paws

AN OPEN CLINICAL TRIAL OF SIDDHA DRUG
***KORAI KIZHANGU CHOORNAM* FOR THE TREATMENT OF**
***KUTHI KAAL VATHAM* (CALCANEAL SPUR)**

- A PILOT STUDY

CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date: _____

Signature: _____

Station: _____

Name: _____

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of the drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of *Korai kizhangu choornam* on *Kuthi Kaal Vatham.*

Date: _____

Signature: _____

Station: _____

Name: _____

Signature of witness: _____

Date: _____

Name: _____

Station: _____

Relationship: _____

AN OPEN CLINICAL TRIAL OF SIDDHA DRUG KORAI KIZHANGU CHOORNAM FOR THE TREATMENT OF KUTHIKAAL VATHAM (CALCANEAL SPUR)

- A PILOT STUDY

FORM-I SELECTION PROFORMA

1. O.P.No / I.P No: _____ 2. Bed No: _____ 3. S.No: _____

4. Name: _____ 5. Age (years): ☐☐

6. Occupation: _____ 7. Income: _____

8. Address: _____

_____

9. Complaints and duration: _____

_____

_____

10. History of present illness: _____

_____

11. Past history: _____

_____

12. Family history: _____

_____

13. Menstrual & Obstetric history: _____

_____

_____

Habits	Yes (1)	No (2)
14. Betalnut chewer	☐	☐
15. Non-vegetarian	☐	☐
16. Alcoholic	☐	☐
17. Smoking	☐	☐

GENERAL EXAMINATION

18. Weight (kg) ☐☐☐

19. Temperature (°F) ☐☐☐ . ☐

20. Pulse rate / minute ☐☐☐

21. Heart rate / minute ☐☐☐

22. Respiratory rate / minute ☐☐☐

23. Blood pressure (mmHg) ☐☐☐ ☐☐☐

	1. Yes	2. No
24. Pallor	☐	☐
25. Jaundice	☐	☐
26. Cyanosis	☐	☐
27. Lymphadenopathy	☐	☐
28. Pedal oedema	☐	☐
29. Clubbing	☐	☐
30. Jugular vein pulsation	☐	☐

VITAL ORGANS EXAMINATION

	1. Normal	2. Affected	
31. Heart	☐	☐	_____
32. Lungs	☐	☐	_____
33. Brain	☐	☐	_____
34. Liver	☐	☐	_____
35. Kidney	☐	☐	_____
36. Spleen	☐	☐	_____
37. Stomach	☐	☐	_____

38. Bones (Calcaneal Bone) ☐ ☐ _____

CLINICAL EXAMINATION

SIGNS AND SYMPTOMS

	1. Yes	2. No
39. Tenderness	☐	☐
40. Morning stiffness	☐	☐
41. Localized swelling of the foot	☐	☐
42.Warmth	☐	☐
43.Colour change	☐	☐
44. Pain during rest	☐	☐
45. Pain during standing	☐	☐
46. Pain during walking	☐	☐

SIDDHA SYSTEM OF EXAMINATON

IYMPORI

	1. Normal	2. Affected
47. Mei	☐	☐ _____
48. Vaai	☐	☐ _____
49. Kan	☐	☐ _____
50. Mookku	☐	☐ _____
51. Sevi	☐	☐ _____

KANMENTHIRIUM

52. Kai ☐ ☐ _____

53. Kaal ☐ ☐ _____

54. Vaai ☐ ☐ _____

55. Eruvai ☐ ☐ _____

56. Karuvaai ☐ ☐ _____

PARUVA KAALAM

57. Kaar kaalam ☐ 58.Koothir kaalam ☐

59. Elavenil kaalam ☐ 60. Muthuvenil kaalam ☐

61. Munpani kaalam ☐ 62. Pinpani kaalam ☐

THINAI

63 Kurunji ☐ 64. Mullai ☐ 65. Marutham ☐

66. Neithal ☐ 67. Paalai ☐

YAKKAI

68. Vali ☐ 69. Azhal ☐ 70. Iyam ☐

71. Valiazhal ☐ 72. Valiaiyam ☐ 73. Azhalvali ☐

74. Azhaliyam ☐ 75. Iyavali ☐ 76. Iyaazhal ☐

GUNAM

77. Sathuva gunam ☐ 78. Rajo gunam ☐

79. Thamo gunam ☐

UYIR THATHUKKAL

VALI

	1. Normal	2. Affected
80. Pranan	☐	☐ _____
81. Abanan	☐	☐ _____
82. Samanan	☐	☐ _____
83. Udhanan	☐	☐ _____
84. Viyanan	☐	☐ _____
85. Nagan	☐	☐ _____
86. Koorman	☐	☐ _____
87. Kirukaran	☐	☐ _____
88. Devathathan	☐	☐ _____
89. Tananjeyan	☐	☐ _____

AZHAL

	1. Normal	2. Affected
90. Anala pittham	☐	☐ _____
91. Prasaka pittham	☐	☐ _____
92. Ranjaka pittham	☐	☐ _____
93. Aalosaka pittham	☐	☐ _____
94. Saathaka pittham	☐	☐ _____

IYAM

	1. Normal	2. Affected
95. Avalambagam	☐	☐ _____
96. Kilethagam	☐	☐ _____

97. Pothagam ☐ ☐ _____

98. Tharpagam ☐ ☐ _____

99. Santhigam ☐ ☐ _____

UDAL THATHUKKAL

	1. Normal	2. Affected
100. Saaram	☐	☐ _____
101. Chenneer	☐	☐ _____
102. Oon	☐	☐ _____
103. Kozhuppu	☐	☐ _____
104. Enbu	☐	☐ _____
105. Moolai	☐	☐ _____
106. Suronitham	☐	☐ _____

ENVAGAI THERVUKAL

	1. Normal	2. Affected
107. Naa	☐	☐ _____
108. Niram	☐	☐ _____
109. Mozhi	☐	☐ _____
110. Vizhi	☐	☐ _____

Malam	1. Normal	2. Affected
111. Niram	☐	☐ _____
112. Thanmai	☐	☐ _____

Moothiram

Neerkuri

113. Niram ☐ ☐ _____

114. Eadai ☐ ☐ _____

115. Manam ☐ ☐ _____

116. Nurai ☐ ☐ _____

117. Enjal ☐ ☐ _____

Neikuri: 118.Vali ☐ 119. Azhal ☐ 120. Iyam ☐

Naadi: 121. Vali ☐ 122. Azhal ☐ 123. Iyam ☐

124. Valiazhal ☐ 125. Valiiyam ☐ 126. Azhalvali ☐

127. Azhaliyam ☐ 128. Iyavali ☐ 129. Iyaazhal ☐

Sparisam: 130. Mithaveppam ☐ 131. Miguveppam ☐

132. Thatpam ☐

INVESTIGATION

BLOOD

133. TC (cells /cumm): ☐☐☐☐

134. DC (%): 1. P ☐☐ 2. L ☐☐ 3. E ☐☐ 4. B ☐☐

5. M ☐

135. Hb (gms %): ☐☐.☐

136. ESR (mm/hr): 1. 1/2hr ☐☐ 2.1hr ☐☐

137. Blood Sugar (R) (mg %): ☐☐☐

138. Blood Urea (mg %): ☐☐

139. Blood Uric acid ☐☐

140. Serum Creatinine (mg %): ☐.☐

141. Serum Cholesterol (mg %): ☐☐☐

URINE

142. Albumin: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

143. Sugar: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

144. Deposit 1. Yes 2. No

1. Pus cells	☐	☐
2. Epithelial cells	☐	☐
3.. RBC	☐	☐
4.. Crystals	☐	☐

145. **X – ray foot**

_____

_____

146. ADMITTED TO TRIAL: 1.Yes ☐ 2. No ☐

If yes

147. S. No: ☐☐

148. I.P / O.P 1. I.P ☐ 2. O.P ☐

149. Drug issued for OP patient (g): ☐☐

Station

Signature of Investigator

Date:

Signature of Medical Officer

AN OPEN CLINICAL TRIAL OF KORAI KIZHANGU CHOORNAM FOR THE TREATMENT OF KUTHI KAAL VATHAM

- A PILOT STUDY

FORM II-ASSESSMENT PERFORMA

1. OP/IP No:_____ 2.BED No:_____3.S.No:_____

4. NAME:_____

5. DATE OF ADMISSION: | | | | | | |

6. DATE OF ASSESSMENT: | | | | | | |

7. DAY OF ASSESSMENT: | | |

CLINICAL EXAMINATION

SIGNS AND SYMPTOMS

	1. Yes	2. No
8. Tenderness	☐	☐
9. Morning stiffness	☐	☐
10. Localized swelling of the foot	☐	☐
11. Warmth	☐	☐
12. Colour change	☐	☐
13. Pain during rest	☐	☐
14. Pain during standing	☐	☐
15. Pain during walking	☐	☐

ENVAGAI THERVUKAL

	1. Normal	2. Affected	
16. Naa	☐	☐	_____
17. Niram	☐	☐	_____
18. Mozhi	☐	☐	_____
19. Vizhi	☐	☐	_____

Malam	1. Normal	2. Affected	
20. Niram	☐	☐	_____
21. Thanmai	☐	☐	_____

Moothiram

Neerkuri

22. Niram	☐	☐	_____
23. Eadai	☐	☐	_____
24. Manam	☐	☐	_____
25. Nurai	☐	☐	_____
26. Enjal	☐	☐	_____

Neikuri: 27.Vali ☐ 28. Azhal ☐ 29. Iyam ☐

Naadi: 30. Vali ☐ 31. Azhal ☐ 32. Iyam ☐

33. Valiazhal ☐ 34. Valiiyam ☐ 35. Azhalvali ☐

36. Azhaliyam ☐ 37. Iyavali ☐ 38. Iyaazhal ☐

Sparisam: 39. Mithaveppam ☐ 40. Miguveppam ☐

41. Thatpam ☐

INVESTIGATION (ONLY ON DAY 49)

BLOOD

42. TC (cells /cumm): ☐☐☐☐

43. DC (%): 1. P ☐☐ 2. L ☐☐ 3. E ☐☐ 4. B ☐☐

5. M ☐

44. Hb (gms %): ☐☐.☐

45. ESR (mm/hr): 1. 1/2hr ☐☐ 2.1hr ☐☐

46. Blood Sugar (R) (mg %): ☐☐☐

47. Blood Urea (mg %): ☐☐

48. Serum Creatinine (mg %): ☐ ☐

49. Serum Cholesterol (mg %): ☐☐☐

URINE

50. Albumin: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

51. Sugar: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

52. Deposit	1. Yes	2. No
1. Pus cells	☐	☐
2. Epithelial cells	☐	☐
3.. RBC	☐	☐
4.. Crystals	☐	☐

53. **X – Ray Foot** ----------

54. RESULT: Cured ☐ Improved ☐ No change ☐

FOR O.P.PATIENTS:

55**. Drugs returned:**

1. No of packs:……..

56. **Drugs issued**

1. No of packs----------

Date:

Signature of Investigator

Station:

Signature of Doctor

PROTOCOL

AN OPEN CLINICAL TRIAL OF SIDDHA DRUG *PALAGARAI PARPAM* FOR THE TREATMENT OF V*ELLAI NOI* (LEUCORRHOEA)
- A PILOT STUDY

BY

Dr. P. KAVITHA, PG STUDENT , DEPT. OF GUNAPADAM, NIS, CHENNAI.

1. BACKGROUND

Leucorrhoea, vaginal discharge is a universal problem of all women. Female genitals are very much prone to infections, since they are moist, more sweaty and covered.

In Siddha system of medicine, the drugs which are commonly used in the treatment of Leucorrhoea includes *Parangipattai Choornam* and K*ungiliya Parpam*.

In *Pathartha Guna Vilakkam* (*Thathu Jeeva Varkam*) by Kannusami Pillai text, there is a preparation of *Palagarai Parpam* mentioned for Leucorrhoea whose efficacy has to be evaluated.

2. ABOUT THE DRUG

a. Ingredients

Purified Cowrie Shells (Palagarai)
Lime Juice

b. Purification

Soak the Palagarai in lime juice and clean it for purification.

c. Process

105 grams of Palagarai was put in a mud vessel and soaked with lime juice and sun-dried for 2 hours and covered using a mud cap (agal). Then the mud cap and the vessel was covered using 7 pieces of clothes (Seelai). Once dried, it was calcined by using 30 – 40 cow dung cakes. After heat gets settled, the mud vessel was uncovered and a white calx was noticed. The calx was then replaced into a different vessel, dried, powdered well and preserved in a vessel.

d. Indications

Vellai, Seetha bethi, Kazhichal and kiragani.

e. Trial drug,Dosage and Duration

Palagarai Parpam – 130 mg b.d. with butter after food for 24 days.

f. Diet

Spicy foods, Brinjal, Bitter guard, Sesban, Tamarind should be avoided. Only coolant foods are advised.

Font: TSCu_InaiMathi

g. Mukkutra Vaeruppadu

It is mentioned in Theran karisal as

"À¸÷ À¢ò¾ Å¢ó¨¾ÂÄ¡Đ §Á¸õ ÅÃ¡Đ"

and in Sadhaga naadi as,

"¯Ú¾¢ÔûÇ À¢ò¾ÁÐ §¾¡ýÈ¢ø ¦ÅôÒ
¯‰½Å¡ö Åò¾¢ÍÃ Á¾¢ °¡Ãí¸û

°¢È¢Đ¦ÀÕõÀ¡Î Ãò¾À¢Ã§Á¸í¸û
§°÷óÐ Á¢ÌÀ¢½¢ÀÄ×õ °¢Èì Ìó¾¡§É"

From the above text, naadi for vellai noi is pittham. So it is came to know that the siddha aetiology for vellai noi is pittha naadi and due to variation of pittha kutram.

According to arusuvai theory,

"À¢ò¾ Á¾¢¸Ã¢ôÀ¢ý §ÀÍõ ÀÃ¢¸¡Ãõ
Íò¾ò ÐÅ§Ã¡Î ¦°¡øÄ¢É¢ôÒî - °ò¾¡Ìõ
¨¸ôÒî Í¨Å§Â ¸Õ¾Å¾ý Å£Ú
±öôÀ¨¼Ô ¦ÁýÚ¨Ãò¾¡ Ã¢íÌ"

Kaippu suvai reduces the Pittha kutram, The drug Palagarai has kaippu suvai, so it will reduce Pittha kutram.

3. AIMS

Primary aim

To estimate the efficacy of *'Palagarai Parpam'* in the treatment of V*ellai Noi* (Tricomonas vaginalis).

.

Secondary aim

To find out the side effects of the drug, if any.

4. POPULATION AND SAMPLE

The population consists of *Vellai Noi* patients (typical vaginal discharge which is profuse, thin, creamy or slightly green in colour, Vaginal PH, vaginal smear for Tricomonas vaginalis positive) satisfying the inclusion and exclusion criteria mentioned below.

The sample consists of *Vellai Noi* patients attending the OPD of Ayothidoss Pandidhar Hospital of the National Institute of Siddha, Chennai – 47.

5. SAMPLE SIZE

The trial size will be 30 patients aged between 15 – 45 years.

6. SELECTION CRITERIA

a. Inclusion criteria

1. Age 15 – 45 years,
2. Willing to attend the OPD once in 6 days for 4 weeks.

b. Exclusion criteria

1. Other Vaginal Infections,
2. Blood stained discharge,
3. Pregnancy,

c. Withdrawal criteria

1. Severe abdominal pain,
2. Any other acute illness.

7. TESTS & ASSESSMENTS

a. Clinical assessment

1. Vaginal discharge, PH, Tricomonas vaginalis positive.
2. Pruritus.
3. Inflammation of Vulva.
4. Dysuria.

b. Tests

Blood

TC (Cells / Cu mm), DC (%), ESR (mm / hr), Hb (g %), Sugar (mg %), VDRL.

Urine

Albumin, Sugar, Deposit.

Vaginal swab - Trichomonas Vaginalis

Vaginal PH.

c. Siddha assessment

En vagai thaervu,
Neer kuri,
Nei kuri.

8. CONDUCT

Vellai Noi patients satisfying the inclusion criteria are selected for the study (Form1).Informed consent will be obtained from the patients.

The trail patients will be issued drugs BID for 6 days at a time. They will be instructed to come for next clinical visit after 6 days. Also, they will be asked to bring back the unconsumed drug during their next visit and return the same. During each visit, patients will be assessed clinically. Lab tests will be carried out before the initiation of treatment and at the end of the trial.

9. FORMS

Form 1

Selection proforma used before admission to the trial.

Form 2

Assessment proforma used during clinic visits once in 6 days.

10. ANALYSIS

The difference in the proportions of patients with signs& symptoms before and after treatment will be analyzed using paired X^2 – tests.

AN OPEN CLINICAL TRIAL OF SIDDHA DRUG *PALAGARAI PARPAM* FOR THE TREATMENT OF *VELLAI NOI* (LEUCORRHOEA)

- A PILOT STUDY

CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date: _____

Signature: _____

Station: _____

Name: _____

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of the drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of *Palagarai parpam* on *Vellai noi.*

Date: _____

Signature: _____

Station: _____

Name: _____

Signature of witness: _____

Date: _____

Name: _____

Station: _____

Relationship: _____

PROTOCOL

PRE-CLINICAL PHARMACOLOGICAL EVALUATION OF *PALAGARAI PARPAM* FOR ANTI- MICROBIAL ACTIVITY

BY

Dr. P. KAVITHA, PG STUDENT, DEPT OF GUNAPADAM, NIS, CHENNAI.

1. BACKGROUND

The drug *Palagarai parpam* has been mentioned in *Pathartha Guna Vilakam* for vellai, *seetha bethi, kazhichal, kiragani.* It is believed that this drug will have good effect against Leucorrhoea, the common vaginal problem affecting the women of reproductive age. So this drug has been selected for the evaluation of anti-microbial activity in Leucorrrhoea.

2. AIMS

Primary aim

To assess the anti-microbial activity of *Palagarai parpam* In vitro.

Secondary aim

1. To evaluate the acute toxicity of *Palagarai parpam* in swiss albino rats through single dose.
2. Biochemical analysis.
3. Physical properties.

3. TEST COMPOUND

Palagarai parpam

Reference: *Pathartha Guna Vilakkam*

4. INTENDED THERAPEUTIC USE

Palagarai parpam in the dose of 130 mg b.d with butter is given for Leucorrhoea

5. ROUTE OF ADMINISTRATION

Oral route

6. EXPERIMENTAL DETAILS

A. ANTI-MICROBIAL ACTIVITY

DISC DIFFUSION METHOD

The *Palagarai parpam* is impregnated in standard filter paper discs (6 mm dm). The media – sabourauds Dextros Agar or Muller Hinton Agar 20 ml per plate (90 mm) are floded with 5 -10 ml of the test inoculam in broth followed by flotation method and then drained . the plates are desiccated 15-20 min for adequate drying at room temperature. The anti-fungal discs are kept at least 15 mm distance from each other (4 - 5 discs can be placed in a 90 mm dm Petri dish). The plates are incubated at 28 degree and the zones of inhibition (mm dm) is measured.

B. ACUTE TOXICITY STUDY

Palagarai parpam suspended in Carboxy Methyl Cellulose (CMC) will be administered to the groups of wister rats in a single oral dose by gavages using a feeding needle. The control group receives equal volume of the CMC vehicle. Six female rats will be used for each dosage level. Starting dose is 5mg/kg. And the subsequent doses are 10, 50, 100, 250, 1000, 2000 and 4000 mg/kg p.o. Observations are made and recorded systematically at 1, 2, 4 and 24 hours after substance administration.

OBSERVATIONS

1. Alertness
2. Aggressiveness
3. Pile erection
4. Grooming
5. Gripping
6. Touch response
7. Decreased motor activity
8. Tremors
9. Convulsions
10. Muscle spasm
11. Catatonia
12. Muscle relaxant
13. Hypnosis
14. Analgesia
15. Lacrimation
16. Exopthalmos
17. Diarrhoea
18. Writhing
19. Respiration
20. Number of deaths (mortality)
21. Urination.
22. Oestrous cycle.
23. Interaction with littering.

AN CLINICAL TRIAL OF SIDDHA DRUG *PALAGARAI PARPAM*
FOR THE TREATMENT OF *VELLAI NOI* (LEUCORRHOEA)
- A PILOT STUDY

FORM-I SELECTION PROFORMA

1. O.P.No / I.P No: _____ 2. Bed No: _____ 3. S.No: _____

4. Name: _____ 5. Age (years): ☐☐ 6. Nationality: _____

7. Religion: _____8. Occupation: _____ 9.Income: _____

10. Address: _____

_____

11. Complaints and duration: _____

_____

_____

12. History of present illness: _____

_____

13. Past history: _____

_____

14. Family history: _____

_____

15. Menstrual & Obstetric history: _____

_____

_____

Habits	Yes (1)	No (2)
16. Betalnut chewer	☐	☐
17. Tea	☐	☐
18. Coffee	☐	☐
19. Milk	☐	☐
20. Non-vegetarian	☐	☐

GENERAL EXAMINATION

21. Built: Normosthenic ☐ Hypersthenic ☐ Hyposthenic ☐

22. Nutrition: Normal ☐ Overweight ☐ Underweight ☐

23. Weight (kg) ☐☐☐

24. Temperature (°F) ☐☐☐ . ☐

25. Pulse rate / minute ☐☐☐

26. Heart rate / minute ☐☐☐

27. Respiratory rate / minute ☐☐☐

28. Blood pressure (mmHg) ☐☐☐ ☐☐☐

	1. Yes	2. No
29. Pallor	☐	☐
30. Jaundice	☐	☐
31. Cyanosis	☐	☐
32. Lymphadenopathy	☐	☐
33. Pedal oedema	☐	☐
34. Clubbing	☐	☐
35. Jugular vein pulsation	☐	☐

VITAL ORGANS EXAMINATION

	1. Normal	2. Affected	
36. Heart	☐	☐	_____
37. Lungs	☐	☐	_____
38. Brain	☐	☐	_____
39. Liver	☐	☐	_____
40. Kidney	☐	☐	_____

41. Spleen ☐ ☐ _____

42. Stomach ☐ ☐ _____

CLINICAL EXAMINATION

SIGNS AND SYMPTOMS

	1. Yes	2.No
43. White discharge	☐	☐
44. Pruritis vulva	☐	☐
45. Dysuria	☐	☐
46. Lower abdominal pain	☐	☐
47. Low back pain	☐	☐

PER VAGINA

VAGINAL DISCHARGE

48. Colour	1. Yellow	☐	2. Green	☐	3. White	☐
49. Consistency	1. Thin	☐	2. Thick	☐	3. Creamy	☐
50. Amount	1. Mild	☐	2. Moderate	☐	3. Profuse	☐

	1. Yes	2.No
51. Odour	☐	☐
52. Inflammation of vulva	☐	☐
53. Tenderness	☐	☐

SIDDHA SYSTEM OF EXAMINATON

IYMPORI

	1. Normal	2. Affected	
54. Mei	☐	☐	_____
55. Vaai	☐	☐	_____
56. Kan	☐	☐	_____

57. Mookku ☐ ☐ _____

58. Sevi ☐ ☐ _____

KANMENTHIRIUM

59. Kai ☐ ☐ _____

60. Kaal ☐ ☐ _____

61. Vaai ☐ ☐ _____

62. Eruvai ☐ ☐ _____

63. Karuvaai ☐ ☐ _____

PARUVA KAALAM

64. Kaar kaalam ☐ 65.Koothir kaalam ☐

66. Elavenil kaalam ☐ 67. Muthuvenil kaalam ☐

68. Munpani kaalam ☐ 69. Pinpani kaalam ☐

THINAI

70. Kurunji ☐ 71. Mullai ☐ 72. Marutham ☐

73. Neithal ☐ 74. Paalai ☐

YAKKAI

75. Vali ☐ 76. Azhal ☐ 77. Iyam ☐

78. Valiazhal ☐ 79. Valiaiyam ☐ 80. Azhalvali ☐

81. Azhaliyam ☐ 82. Iyavali ☐ 83. Iyaazhal ☐

GUNAM

84. Sathuva gunam ☐ 85. Rajo gunam ☐

86. Tamo gunam ☐

UYIR THATHUKKAL

VALI

	1. Normal	2. Affected
87. Pranan	☐	☐ _____
88. Abanan	☐	☐ _____
89. Samanan	☐	☐ _____
90. Udhanan	☐	☐ _____
91. Viyanan	☐	☐ _____
92. Nagan	☐	☐ _____
93. Koorman	☐	☐ _____
94. Kirukaran	☐	☐ _____
95. Devathathan	☐	☐ _____
96. Tananjeyan	☐	☐ _____

AZHAL

	1. Normal	2. Affected
97. Anala pittham	☐	☐ _____
98. Prasaka pittham	☐	☐ _____
99. Ranjaka pittham	☐	☐ _____
100. Aalosaka pittham	☐	☐ _____
101. Saathaka pittham	☐	☐ _____

IYAM

	1. Normal	2. Affected
102. Avalambagam	☐	☐ _____
103. Kilethagam	☐	☐ _____
104. Pothagam	☐	☐ _____
105. Tharpagam	☐	☐ _____
107. Santhigam	☐	☐ _____

UDAL THATHUKKAL

	1. Normal	2. Affected
108. Saaram	☐	☐ _____
109. Chenneer	☐	☐ _____
110. Oon	☐	☐ _____
111. Kozhuppu	☐	☐ _____
112. Enbu	☐	☐ _____
113. Moolai	☐	☐ _____
114. Suronitham	☐	☐ _____

ENVAGAI THERVUKAL

	1. Normal	2. Affected
115. Naa	☐	☐ _____
116. Niram	☐	☐ _____
117. Mozhi	☐	☐ _____
118. Vizhi	☐	☐ _____

Malam	1. Normal	2. Affected
119. Niram	☐	☐ _____
120. Thanmai	☐	☐ _____

Moothiram
Neerkuri

121. Niram	☐	☐ _____
122. Eadai	☐	☐ _____
123. Manam	☐	☐ _____
124. Nurai	☐	☐ _____
125. Enjal	☐	☐ _____

Neikuri: 126.Vali ☐ 127. Azhal ☐ 128. Iyam ☐

Naadi: 129. Vali ☐ 130. Azhal ☐ 131. Iyam ☐

132. Valiazhal ☐ 133. Valiiyam ☐ 134. Azhalvali ☐

135. Azhaliyam ☐ 136. Iyavali ☐ 137. Iyaazhal ☐

Sparisam: 138. Mithaveppam ☐ 139. Miguveppam ☐

140. Thatpam ☐

INVESTIGATION
BLOOD

141. TC (cells /cumm): ☐☐☐☐

142. DC (%): 1. P ☐☐ 2. L ☐☐ 3. E ☐☐ 4. B ☐☐

5. M ☐

143. Hb (gms %): ☐☐.☐

144. ESR (mm/hr): 1. 1/2hr ☐☐ 2.1hr ☐☐

145. Blood Sugar (R) (mg %): ☐☐☐

146. Blood Urea (mg %): ☐☐

147. Serum Creatinine (mg %): ☐.☐

148. Serum Cholesterol (mg %): ☐☐☐

149. VDRL 1. Positive ☐ 2. Negative ☐

URINE

150. Albumin: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

151. Sugar: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

152. Deposit	1. Yes	2. No
1. Pus cells	☐	☐
2. Epithelial cells	☐	☐
3.. RBC	☐	☐
4.. Crystals	☐	☐

VAGINAL SWAB

_____

_____

VAGINAL PH_____

153. ADMITTED TO TRIAL: 1.Yes ☐ 2. No ☐

If yes

154. S. No: ☐☐

155. I.P / O.P 1. I.P ☐ 2. O.P ☐

156. Drug issued for OP patient (g): ☐☐

Station Signature of Investigator

Date Signature of Medical Officer

AN OPEN CLINICAL TRIAL OF PALAGARAI PARPAM FOR THE TREATMENT OF *VELLAI NOI (* LEUCORRHOEA)

- A PILOT STUDY

FORM II-ASSESSMENT PERFORMA

1. OP/IP No:_____ 2.BED No:_____3.S.No:_____

4. NAME:_____

5. DATE OF ADMISSION: | | | | | | |

6. DATE OF ASSESSMENT: | | | | | | |

7. DAY OF ASSESSMENT: | | |

CLINICAL EXAMINATION

SIGNS AND SYMPTOMS

	1. Yes	2.No
8. White discharge	☐	☐
9. Pruritis vulva	☐	☐
10. Dysuria	☐	☐
11. Lower abdominal pain	☐	☐
12. Low back pain	☐	☐

PER VAGINA

VAGINAL DISCHARGE

13. Colour	1. Yellow	☐	2. Green	☐	3. White	☐
14. Consistency	1. Thin	☐	2. Thick	☐	3. Creamy	☐
15. Amount	1. Mild	☐	2. Moderate	☐	3. Profuse	☐

	1. Yes	2.No
16. Odour	☐	☐
17. Inflammation of vulva	☐	☐
18. Tenderness	☐	☐

ENVAGAI THERVUKAL

	1. Normal	2. Affected	
19. Naa	☐	☐	_____
20. Niram	☐	☐	_____
21. Mozhi	☐	☐	_____
22. Vizhi	☐	☐	_____

Malam	1. Normal	2. Affected	
23. Niram	☐	☐	_____
24. Thanmai	☐	☐	_____

Moothiram

Neerkuri

25. Niram	☐	☐	_____
26. Eadai	☐	☐	_____
27. Manam	☐	☐	_____
28. Nurai	☐	☐	_____
29. Enjal	☐	☐	_____

Neikuri:	30.Vali	☐	31. Azhal	☐	32. Iyam	☐
Naadi:	33. Vali	☐	34. Azhal	☐	35. Iyam	☐
	36. Valiazhal	☐	37. Valiiyam	☐	38. Azhalvali	☐
	39. Azhaliyam	☐	40. Iyavali	☐	41. Iyaazhal	☐

Sparisam: 42. Mithaveppam ☐ 43. Miguveppam ☐

44. Thatpam ☐

INVESTIGATION (ONLY ON DAY 25)

BLOOD

45. TC (cells /cumm): ☐☐☐☐

46. DC (%): 1. P ☐☐ 2. L ☐☐ 3. E ☐☐ 4. B ☐☐

5. M ☐

47. Hb (gms %): ☐☐.☐

48. ESR (mm/hr): 1. 1/2hr ☐☐ 2.1hr ☐☐

49. Blood Sugar (R) (mg %): ☐☐☐

50. Blood Urea (mg %): ☐☐

51. Serum Creatinine (mg %): ☐ ☐

52. Serum Cholesterol (mg %): ☐☐☐

53. VDRL 1. Positive ☐ 2. Negative ☐

URINE

54. Albumin: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

55. Sugar: 0. Nil ☐ 1. Trace ☐ 2. + ☐ 3. + + ☐

4. + + + ☐

56. Deposit 1. Yes 2. No

1. Pus cells ☐ ☐

2. Epithelial cells ☐ ☐

3. RBC ☐ ☐

4. Crystals ☐ ☐

MOTION

	1. Yes	2.No
57. Ova	☐	☐
58. Cyst	☐	☐
59. Occult blood	☐	☐

VAGINAL SWAB

_____

_____

60. RESULT: Cured ☐ Improved ☐ No change ☐

FOR O.P.PATIENTS:

61**. Drugs returned**

1. No of packs----------

62. **Drugs issued**

1. No of packs----------

Date:

Signature of Investigator

Station:

Signature of Doctor